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# REPORT RESUMES

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IDENTIFICATION OF ORIENTATION AND MOBILITY SKILLS RELATING TO DEVELOPMENTAL TASKS FOR YOUNG BLIND CHILDREN.

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CALIFORNIA STATE COLL. AT LOS ANGELES

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MEASUREMENT SCALES WERE DEVELOPED FOR USE IN DESCRIBING AND EVALUATING SKILLS WHICH BLIND CHILDREN DEVELOP FOR EXPLORING AND COMPREHENDING THEIR ENVIRONMENT, AND ATTAINING REASONABLE SELF-DEPENDENCE. STUDY FEASIBILITY EXCLUDED SOME OF THE BASIC LIVING SKILLS, LEAVING ONLY THOSE RELATED TO THE BLIND CHILD'S ORIENTATION AND MOBILITY. THE ITEMS USED IN DRAFTING THE SCALES CAME FROM SEVERAL SOURCES, INCLUDING RESEARCH STUDIES, TEACHERS OF THE BLIND, SPECIAL CONSULTANTS, AND EXISTING TESTS AND SCALES. A LIST OF 288 PERTINENT ITEMS WAS COLLECTED. EACH OF THE ITEMS, ORGANIZED INTO 58 SUBSCALES, WAS JUDGED ON THE BASES OF (1) SIGNIFICANCE, (2) FEASIBILITY OF OBSERVATION, AND (3) RANK IN DEVELOPMENTAL SEQUENCE. SUBSCALES WERE ALSO EVALUATED AS WHOLE ENTITIES. OF ALL SUBSCALES ASSESSED, 42 WERE DEEMED SUITABLE FOR FIELD TRIAL. TWELVE TOTALLY BLIND CHILDREN, REPRESENTING AGES FROM 2 TO 12 YEARS, WERE TESTED DURING THE FIELD TRIAL. THIRTY-FIVE PROMISING SUBSCALES WERE IDENTIFIED, PERTINENT TO SUCH SKILLS AS (1) AUDITORY PERCEPTION AND DISCRIMINATION, (2) WALKING, RUNNING, AND JUMPING, (3) TOUCH RECOGNITION, (4) TRAVEL MOVEMENT AND MOVEMENT REALIZATION, (5) RIGHT AND LEFT RECOGNITION, (6) DIRECTION TAKING, (7) BALANCE, AND (8) FAMILIARIZATION. (JH)

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# IDENTIFICATION OF ORIENTATION AND MOBILITY SKILLS RELATING TO DEVELOPMENTAL TASKS FOR YOUNG BLIND CHILDREN

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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June 15, 1965 – August 1, 1966

# IDENTIFICATION OF ORIENTATION AND MOBILITY SKILLS RELATING TO DEVELOPMENTAL TASKS FOR YOUNG BLIND CHILDREN

Office of Educational Research Project Number 5-0980-4-11-3

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## Permission to Quote

The Project staff wishes to express appreciation to the publishers of the works listed below for permission to reproduce the excerpts which are cited in Part II of the report.

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# PART I

## INTRODUCTION

The retraining programs developed for disabled veterans have been responsible for major advances in the techniques of rehabilitation. The development of instruction in orientation and mobility for the adult blind is a notable example.

The early work in the development of orientation and mobility technique at Hines Veterans Hospital (Illinois) paved the way for a special system of instruction. The development of these techniques has, in turn, led to the establishment of the profession of Peripatology, or, Orientation and Mobility Specialist.

Currently, there is widespread interest in extending orientation and mobility training to young blind children by the modification and extension of the Hines Techniques. As a result of the several demonstration projects, it seems apparent that systematic instruction in mobility will soon become a regular part of public school instructional programs for blind children and youth (Catholic Charities, 1962; Alameda County, 1963; Metropolitan Society, 1963). A recent survey of Los Angeles County proposes a long range plan for such instruction for all blind children and youth in the county (Planning, 1965).

### Objectives

The project report herein was designed to contribute to the application of the principles of orientation and mobility instruction to young blind children. The identification and description of the orientation and mobility skills required of blind children is a logical first step in the development of a program of systematic instruction and in the evaluation of such instruction. This project has as its objective the development of scales to be used in the description and assessment of orientation and mobility skills of young blind children. The need for such an instrument was considered to be of high priority among the problems identified in a recent survey of the orientation and mobility needs of blind children in Los Angeles County (Planning, 1965).

The primary objectives of the project may be stated formally as follows:

1. What are the developmental tasks relating to travel for young blind children?
2. What are the orientation and mobility skills required for these developmental tasks for young blind children?
3. What are the related learnings essential in the performance of each of these orientation and mobility skills?

## Orientation and Mobility

The terms orientation and mobility are used in a variety of ways by professionals. The definition of terms and the language in this new field are in an evolutionary stage. Ashcroft has suggested a rather comprehensive definition:

> Orientation and Mobility skills are defined as adjustment and skills necessary for effective interaction with one's total environment. These adjustments and skills would incorporate interpersonal relations, social skills, personal presence, and the physical navigation of one's immediate and extended environment (1963).

This definition not only deals with skills relating to environmental control but includes management of inter-personal relations and social skills.

Lowenfeld has provided a helpful definition of mobility by pointing out that "Mobility is divided into two areas: (1) mental orientation and (2) locomotion. Aspects of obstacle and sensory perception are a part of mobility (1963)."

The project staff employed the following working definitions of the two terms:

Orientation: The process of utilizing the remaining senses in establishing one's position and relationship to all other significant objects in one's environment.

Mobility: The ability to navigate from one's present fixed position to one's desired position in another part of the environment.

## Need for Research and Early Training

Extensive research is needed if instructional programs in orientation and mobility are to be well conceived and built upon a sound informational basis. The report of a survey of orientation and mobility needs in Los Angeles County enumerates a number of problems which relate to research and program planning (Planning, 1965).

1. Investigation of the needs of and appropriate orientation and mobility experiences for preschool and elementary age children.
2. Development of a means of judging student readiness for each level of orientation and mobility training.
3. Investigation of the special orientation and mobility needs of students with visual acuity of 20/200 - 5/200.
4. Determination of the optimum initial orientation and mobility training that should be provided by orientation and mobility specialists at each level as well as the recurring demands for additional training in the use of a cane in order to help meet the child's changing needs.
5. Study of the effect of instruction by parents and teachers on the time required for training by orientation and mobility specialists.
6. Experimentation to determine needed modifications in the "Hines Procedures," developed and validated with blind adults, so that these procedures may be used effectively with children.
7. Investigation of the orientation and mobility needs of low vision students, especially in relation to their utilization of low-vision aids.

The literature on orientation and mobility contains many appeals for systematic instruction for young blind children. As early as 1951, a report of a workshop for parents of blind children made two significant observations: (1) the importance of instruction in spatial orientation and locomotion skills and (2) the necessity to examine and study the factors which contribute to efficient living in the area of personal care, social maturity, physical independence and orientation (American Foundation for the Blind, 1951).

Miller (1964) credits Hoover, whose role in the development of the mobility program for blinded war veterans is well known, as stating, "this /orientation and mobility/ seems a worthy subject for the best teaching skill... on a basis more thorough than any other subject taught to blind children."

Bledsoe (1963) urges parents to plan early for the future mobility needs of their blind children. Ability in orientation has its basis in the home experiences of the pre-school child.

Additional support is given by Carrick (1962) who reports that "children whose parents have allowed...and/or encouraged progressive freedom, show the greatest ability to move about."

Lowenfeld (1964) believes that a blind person's lifetime travel pattern is largely determined in his early years.

Peabody (1963) points out that "it behooves us to get into homes early and to study carefully the young child and such factors...as the dependency-independency needs of child and parents, in order to free the child for exploration, learning and growth."

Dunn and Mackie (1955) stress the significance of training by stating that the "blind child's physical orientation and ability to travel are basic to his independence, as well as to the respect which this competency inspires in others."

Heatherington (1955) argues that travel skills are so essential for the mature person within the sighted society that "it is also imperative that this training be extended to include elementary age children."

The literature in the field clearly supports the importance of training in orientation and mobility for young children and provides strong support for systematic research in the field.

## Approach to the problem

This project, relating to the identification of orientation and mobility skills which are essential for young blind children was approached with the following assumptions:

1. The sequence of developmental tasks for blind children is, to a significant degree, comparable to that for seeing children.

   The developmental data obtained from research studies of early childhood provide a helpful base for the identification and tentative placement of orientation and mobility skills for blind children. Blind children, when free from other physical or mental limitations, should approximate the sequential development of skills of normal children when the former are given full benefit of appropriate experiences and training. Gesell has stated this observation as follows: "To a significant extent, the sequence in behavior development in an otherwise normal blind child are comparable to those of a seeing child (1943,p.265)."

2. The development of orientation and mobility skills is an essential part of the pre-school and elementary school training of the blind child.

The orientation and mobility skills were identified by an exhaustive search of the literature, including child development scales and by soliciting suggestions of experienced teachers of young blind children. The skills which related to each major orientation and mobility task were arranged in a developmental sequence by a jury of nine specialists. Each scale on which the jurors showed fairly high agreement on sequencing of items was then administered to twelve blind children as a check on its scalability, as judged by modified Guttman standards of reproducibility.

Part II of the Report is devoted to a summary of pertinent literature relating to the problem.

Part III of the Report describes the details relating to the development of the Scales.

Part IV reports upon the use of the Scales in a field trial.

# PART II

## REVIEW OF RELATED LITERATURE

Although research relating specifically to this project is limited, research studies on the development of motor skills and spatial concepts in normal children have many applications to the study of the blind. In order to cover the literature relating both directly and indirectly to the problem, the review which follows will draw upon selected research studies as well as appropriate theoretical writings and is organized around the following phases of the problem:

1. Theory of Developmental Tasks
2. Developmental Studies Relating to Motor Skills in Normal Children
3. Studies of Blind Children with Implications for Orientation and Mobility
4. Studies of the Sensory and Perceptual Aspects of Orientation and Mobility
5. Scales Relating to Motor Skills and Social Competence
6. Instructional Guides

## THEORY OF DEVELOPMENTAL TASKS

The sequencing of learning experiences in modern education is generally based on children's developmental needs. A synthesis of developmental needs, linking individual needs and societal demands, was presented as a Theory of Developmental Tasks by Havighurst (1962). Havighurst defines a developmental task as:

> A task which arises at or about a certain period in the life of the individual, successful achievement of which leads to his happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks (1962,p. 2).

These tasks are explained as arising from the following sources:

> Physical maturation, the pressure of the cultural process on the individual; from the desires, aspirations and values of the emerging personality, and they arise in most cases from combinations of these factors acting together (1962, p. 4).

Havighurst (1953) describes in some detail the developmental tasks of infancy, childhood, middle childhood and later years. Since the project being reported upon here was concerned with blind children under twelve years, major attention was given to tasks for these years. His basic tasks for infancy and early childhood are:

> Learning to walk.
> Learning to take solid foods.
> Learning to talk.
> Learning to control the elimination of body wastes.
> Learning sex differences and sexual modesty.
> Achieving physiological stability.
> Forming simple concepts of social and physical reality.
> Learning to relate oneself emotionally to parents, siblings and other people.
> Learning to distinguish right and wrong and developing a conscience.
> (1953,p.6-14)

Similarly, nine tasks of middle childhood are described:

Learning physical skills necessary for ordinary games.
Building wholesome attitudes towards oneself as a growing organism.
Learning to get along with age-mates.
Learning appropriate masculine and feminine role.
Developing fundamental skills in reading, writing and calculating.
Developing concepts necessary for everyday living.
Developing conscience, morality and a scale of values.
Achieving personal independence.
Developing attitudes towards social groups and institutions(1953,pp.15-28)

Certain tasks in the above list are directly applicable to the area of orientation and mobility and will be discussed again in later sections of this report. Special emphasis has been placed on the learning of physical skills required in locomotion, the development of environmental concepts necessary for everyday living and the achievement of personal independence.

## DEVELOPMENTAL STUDIES RELATING TO MOTOR SKILLS IN NORMAL CHILDREN

The successful fulfillment of developmental needs is dependent upon many variables, such as individual differences in many abilities, the presence of mental and physical anomalies and sufficient opportunities for experience and exploration. Peabody relates developmental needs to orientation and mobility training as follows:

> An intensive study in greater depth of basic theoretical knowledge as it relates to orientation and mobility is mandatory. We should look back to our child growth and development studies to realize fully the importance of the fundamental need of the child for freedom to move, and how, through movement a child is learning to control and work through space (1962,p.3).

Studies by Gesell and his associates were selected as the primary source of data on child development. Additional representative studies were utilized to support this primary source and to provide supplementation in specific areas. Major attention was given to developmental data which related to motor skills since these skills have a direct bearing on orientation and mobility of the blind.

Gesell and his associates (1943, 1946, 1949, 1956) have made extensive descriptive studies of child development. These studies span the years from infancy to adolescence. The successive studies based upon observation and interview techniques, provide longitudinal data on many of the same subjects. Together, Gesell's studies provide a twelve-year view of the growth cycle of children. Even though the children studied may not be representative of their age groups nationally, the data are adequate to establish sequences of developmental behavior.

The following list provides examples of types of normative data which were studied as a basis for ordering items in our various sub-scales. All behaviors are cited from Gesell.

1. Locomotion

| | |
|---|---|
| 2 years | Squats in play |
| 3 years | Ascends stairs, alternating forward foot |
| 4 years | Carries cup of liquid without spilling |
| 5 years | Jumps from table height |
| 6 years | Balls bounced and sometimes successfully caught |
| 7 years | Roller skates |
| 8 years | Runs into moving rope in jump rope |
| 9 years | Shows increased control of own speed of movement |
| 11 years | Participates in games requiring eye-hand coordination |

2. Spatial understandings

| | |
|---|---|
| 2 years | Puts ball on chair, hands to mother |
| 3 years | Names his own street |
| 4 years | Carries out commands in regard to:top,behind,etc. |
| 5 years | Points out simple route |
| 6 years | Distinguishes right and left on own body |
| 7 years | Begins understanding of cardinal directions |
| 8 years | Distinguishes right and left on body of another |
| 9 years | Goes on bus alone |
| 10 years | Crosses most streets alone |
| 11 years | Verbalizes relation between immediate space and outer space |

3. Daily Living Skills

| | |
|---|---|
| 2 years | Removes shoes, socks, pants |
| 3 years | Undresses rapidly and well |
| 4 years | Distinguishes front from back of clothing |
| 5 years | Dresses self completely except for tying bows |
| 7 years | Ties shoe laces |
| 10 years | Selects own clothes |
| 12 years | Takes great interest in own appearance |

Baldwin (1955) presents a list of developmental characteristics compiled from previous studies. His ordering of the developmental steps in the child's cognition of space was particularly useful in sequencing ideas of spatial relationships as they related to successful performance of orientation and mobility skills. A prerequisite to the following points is the child's cognition of his own person in relation to space. Then, the following awarenesses develop in the child:

1. Awareness of existence in the external world.
2. Understanding that properties of objects are unchanged by motion.
3. Recognition that, if location is known, any path will locate an object.
4. Integration of sense impressions to get information.
5. Distinction between external movement and child's own movement.
6. Recognition of himself as one of the objects in his own cognition map.

Piaget (1954), who is noted for his long range observations of the characteristics of the child's developing intellect, defines three levels of cognition pertinent to the formation of children's concepts. These support and in some instances generalize the organization noted by Baldwin. They are:

First stage: 0-6 years
    Establishing relationships between experience and action.
    Manipulating world through action.
    Learning how to represent the external through trial and error.

Second stage: 7-11 years
    Using concrete operations
    Developing an internalized structure.
    Using the present as the immediate reality /unable to deal with possibilities/.

Third stage: 12-14 years
    Using formal operations.
    Operating on hypothetical propositions rather than on just what he experienced.

Havighurst (1953) provides descriptions of developmental growth patterns which are less detailed than those of Gesell. However, Havighurst's steps in mental growth relate closely to the sequences employed in the construction of the scales of orientation and mobility skills.

He structures the developmental tasks in cognition as follows:

Early childhood
1. Immediate physical and face to face exploration.
2. Perceiving reality through direct experience by seeing, feeling, hearing, smelling objects.

Middle childhood
1. Mental exploration of concrete facts.
2. Vicarious experience becomes meaningful.
3. Toward the end of the period abstract thinking appears.

The literature on child development and the theory of developmental tasks provide helpful bases for planning the orientation and mobility scales. The developmental tasks provided a framework for relating the scale to broad aspects of the curriculum. The data from developmental studies of normal children provided a basis for the ordering or sequencing of skills.

Since the developmental tasks and developmental data formed a helpful reference base for selecting and ordering skills, the term developmental referents has been selected to describe this relationship. In the early stages of searching the related literature for research data upon which to develop a preliminary edition of the scale, a systematic summarization was made of all relevant developmental data for normal children. Related orientation and mobility skills were then identified. These analyses focused specifically on the demands placed upon blind children by home, school and environment.

The following samples illustrate the use of the developmental referent and the understanding or skill it implies for orientation and mobility of the blind child.

| DEVELOPMENTAL REFERENT | IMPLIED ORIENTATION AND MOBILITY SKILLS |
|---|---|
| Ages 5-6 | |
| Is able to stay on a specific known route | Uses sound, air, tactual cues for location |
| Is able to recognize specified landmarks | Uses specific obvious landmarks: e.g. teacher's desk |

Ages 7-8

| | |
|---|---|
| Uses telephone | Learns to dial phone correctly |

Ages 9-10

| | |
|---|---|
| Familiar with directional concepts, N.S.E.W. | Is able to respond to directional terms: turn to right, to north, etc. |

Ages 11-12

| | |
|---|---|
| Discriminating tactual investigation characteristic | Uses tactual observation to identify objects more discriminately |
| Has ability to mentally-map an area | Has mental map of school area. Is able to use multiple routes. |

## STUDIES OF BLIND CHILDREN WITH IMPLICATIONS FOR ORIENTATION AND MOBILITY

The literature, particularly that of the late 1950's and early 1960's, contains numerous discussions of orientation and mobility skills The following statement by Carrick (1962) emphasizes the importance of the child's mobility in his total development:

> ...my concept of the beginning of orientation and mobility...An environment that will produce a healthy child, physically and emotionally, who can relate to others and move about with comparative ease in his environment. However, there are the specifics, the skills that can be taught. Just as school and the stimulation of learning is the best therapy for the blind child, the learning of skills that enable him to become mobile are needed for the total developmental picture (p.11).

Five studies of blind children were of particular importance to this study both in providing support to basic assumptions of the study and in providing resources for scale item development.

Norris and Associates (1957)studied the development of pre-school blind children on a longitudinal basis. Data were collected on a total of 295 pre-school children as soon as possible after an initial diagnosis was made; data collection continued to age six. A selected sample of 66 children was studied intensively with at least yearly visits by the psychologist and the social worker to the home of each child.

Increasing the depth and the breadth of the study was greatly facilitated by providing families with medical, psychiatric, social work and nursery school services. The major objectives of the study were:

1. To establish accurate developmental norms for young blind children (up to the age of six).
2. To gain an understanding of the factors which promote or retard optimal growth in blind children.

Extensive psychological data were collected by the use of the following instruments:

> Interim Hayes Binet Scale, Maxfield-Fjeld Tentative Adaptation of the Vineland Social Maturity Scale, Cattell Infant Intelligence Scale, Kuhlmann-Anderson Tests of Mental Development.

Special scales were developed to measure opportunity for active play, motor skills, competence in self help, motor behavior and mobility. The authors report that it was possible for them to identify the conditions for optimal personal development of the blind child. Optimal development is meant to include the acquisition of independence, responsibility, free functioning and a potential comparable to that of well adjusted sighted children within the same age range.

> In general, the findings based on the Cattell Scale show that the development of children in the intensive group was approximately equal to that of normal children except on items that require a background of specific experience (Norris, 1957, p.19).

Conclusions of particular significance to basic assumptions of this study are (Norris, 1959):

1. Skills are most easily acquired at time of optimum readiness (p.23).
2. Functioning of the child is closely related to opportunities for experiences appropriate to his developmental level (p.24).
3. Only as the child is given opportunity and encouragement to use all of his sensory modalities in the first-hand exploration of his surroundings can he develop the skills and the motivation which are basic to his later development (p.25).

4. ...the development of blind children can follow an orderly progression without serious retardation...(pp.28-33).

5. Blindness in itself does not necessarily mean that a blind child's over-all development will be slower than that of a sighted child (p. 41).

6. The ability of the blind child to orient himself in space and obtain some freedom of movement is important in determining the degree to which he can make an adequate adjustment to daily living (p. 57).

7. ...optimal development takes place only to the extent that the over-all situation for the child has been favorable (p.62).

8. There are no special problems or "handicaps" which can be attributed directly to blindness (p. 65).

A follow-up study by Norris, et al. (1961) led to further significant conclusions:

1. The child's degree of independence and initiative and his mobility...would give clues as to the relationship between his functioning and the expectations and attitudes of those around him (p. 16).

2. Given favorable opportunities for development, the blind child can achieve a degree of functioning much higher than that usually expected of him and one which compares favorably with that of other children of his chronological age level (p.32).

The Norris Scales relating to motor development and mobility were valuable resources for the present study. The percentages of blind children at each age who had mastered certain mobility skills were reported.

Rating scales used by Norris which were of particular value in scale development for this project include: (1)Opportunities for Active Play and Development of Motor Skills, (2) Development of Necessary Skills and Competence in Self Help, (3) Motor Behavior and Mobility and (4) Mobility Rating Scale. The items of these rating scales provided direct assistance in the development of scale items for this study as well as in making preliminary judgment regarding the sequencing of items within the scales.

Gesell (1949)studied a blind child intensively with the following questions in mind:(1) Is the retardation of behavior due to blindness or to the complicating factors? (2) Can blindness *per se* produce retardation? (3) How does blindness, in itself, affect the shapes of the patterns of behavior?

The major conclusions of his study relate significantly to the assumptions of the present study.

> Behavior patterns are influenced and guided by vision, but are not essentially products of vision (1949, p.272).
>
> Blindness profoundly alters the structure of mental life, but does not disorganize it in an otherwise normally endowed individual (1949, p.265).
>
> Sequences of behavior development are comparable to those of the seeing child (1949, p.272).

Garry and Ascarelli (1960)undertook one of the few experimental studies in the field in order to determine the influence of training upon topographical orientation and spatial orientation of congenitally blind children.

Sixty totally blind children, ages 5-14, were rated on the basis of their performance on a Spatial Relation Performance test and on the basis of direct observations by teachers and housemothers. On the basis of these measurements, the children were divided into two sub-groups -- good performers and poor performers. These groups were roughly matched with respect to age. The poor performers were divided into five groups of six children each for special training. Each child served as his own control. Changes between pretesting and post-testing were measured by tests and by observer ratings.

The aspects of space organization selected for emphasis were: (1) perception of self, (2) orientation, (3) object perception and (4)language. The four phases of the training program centered around (1) posture and bodily movement as a determinant of position of self and as a basis for establishing a point of reference for location of other places, objects,etc., (2) structuring extended space, topology, brachial space, sounds related to structuring space, (3) three-dimensional space and perception of objects, (4) communication regarding organization of space by means of representative and meaningful vocabulary. Concepts basic to the purposes of the study are thoroughly defined and discussed. Lesson plans for the four phases of the study are presented.

The results show that the control group exhibited no significant change in any of the competencies measured. The experimental group showed changes that were statistically significant at the .001 level of confidence on four of six measured.

It is noted that at the end of the study, the experimental group was not superior to the control group in attack and spatial scores. The authors suggest that the critical stages for such training may be in the preschool years.

The major contribution of this study to the present lies in its detailed analysis of some of the factors in spatial orientation.

Parmalee, _et al_.(1954) (1962) further support assumptions of this study by a comparative investigation which included ten prematurely born infants blinded by retrolental fibroplasia, ten prematurely born infants with normal vision and ten full term infants with vision. All subjects were tested by the same examiner at one year of age, using a modified form of the Gesell Infant Development Test. Parmalee and associates report that there was no statistical difference in mean scores for all three groups. Follow-up evaluations by observation and testing were made between the ages of 3 and 6 years. Results remained substantially the same. The implied assumption is that blind premature babies develop comparably to seeing infants, whether premature or full term.

Buell (1950) studied the motor performance of visually handicapped children. All levels of the Iowa Brace Test were administered to 865 children (519 boys and 346 girls), whose ages ranged from ten to twenty. The subjects came from both residential and public schools and included both Negro and white blind children. The findings showed that blind and partially-seeing children performed below norms for the sighted. General weaknesses of the visually handicapped are body control, static balance, coordination and agility. The author attributes the poor results to limited physical activity and to over-protection by parents of visually handicapped children. The deficiencies in motor performance provide additional support for a comprehensive program of instruction in orientation and mobility. The motor activity weaknesses discovered provide additional evidence of the need for orientation and mobility training.

## STUDIES OF THE SENSORY AND PERCEPTUAL ASPECTS OF ORIENTATION AND MOBILITY

Although perception is based on sensory discrimination, a useful distinction between the two processes has been made by Gibson (1963):

> The variable of sensory discrimination is radically different from the variable of perceptual discrimination. Sensory discriminations are characterized by quality, intensity, extensity, duration, pitch, loudness, timbre, pressure, warm, cold and pain. Perception involves meaning; sensation does not. Perceiving unquestionably involves sensing...or use of sense organs. The invariance of perception occurs in hearing and touch. The useful dimensions or sensitivity are those that specify the environment and the observer's relation to it.

Thus, use of sensory modalities is seen to include two distinct variables: perception and sensory discrimination. Adequate use of sensory cues was given major emphasis in the development of items for the orientation and mobility scales of this study.

Of the physical disabilities blindness produces, the most significant is the impoverishment of sensory input and consequently of perception. About 80-85 percent of learning is the direct result of visual stimuli. This fact alone indicates the tremendous amount of adaptation which the blind child must make to use his other sensory pathways to compensate for total visual loss. Thus, the greater the number of ways by which sensory inputs can be received and interpreted correctly, the more efficiently will the blind acquire functional ideas upon which to build skills and to understand relationships.

### Space Perception and Understanding of Spatial Relationships

Comprehension of relationships in a spatial context is dependent upon perception of space. Space perceptions derive from such ideas as location, size, shape and angularity of surface contours. Cratty (1947) and Rand (1950) support the position that spatial perceptions are learned and that early experience modifies the perceptual capacities of the child. Gesell (1949) affirms that the perceptual process follows a developmental pattern. For example, in an intensive study of vision he found that:

> ...not until the eighth year does the child seem to realize that objects may be perceived differently by another person. Prior to that time, spatial judgments are made only within a personal reference system (1949, p.21).

Worchel (1951), conducting one of the few recent studies on space perception of blind adults, reported that sighted subjects are superior to the blind in tactual form perception, imaginal manipulation of space relations and in space orientation. The blind subjects did as well as the sighted in the recognition of tactual form. Age of blinding appeared to be highly correlated with the ability to manipulate space relations.

Drever (1955), replicating Worchel's study, but including children, found that there seems to be a generalized defect of space perception associated with early blindness. He concludes that space perception for both blind and sighted seems to require a long apprenticeship, either in the visual or tactual-kinesthetic modalities.

Hunter (1960) found that the congenitally blind habitually underestimate both large and small dimensions and tend to be more disoriented than the adventitiously blind.

With respect to the effects of early blindness on performance of tactile and auditory tasks, Axelrod's (1959) findings failed to support the hypothesis that the basic impairment was specifically in the ability to conceptualize space. Deficits associated with early blindness appeared in tasks which are not primarily spatial and in situations which required the subject to transfer a principle of solution across modalities.

Normal visual perception appears to be the result of a long period of learning. Observations of congenitally blind individuals who had their vision restored in later life indicate that learning to see is a slow process (Von Senden,1932). Riesen (1946) confirmed this clinical observation by experimentation with chimpanzee infants. One chimpanzee, who had been restricted to total darkness during his first 18 months began to depend on vision after a year of exposure to daylight; the other, who had been kept two years in darkness, refused to use visual cues when exposed to daylight.

Hunter notes that:

> ...in the instruction of spatial perception in the blind, the problem of habituation and automation becomes of prime importance. As long as cues received by the blind individual must be consciously analyzed and interpreted, his efficiency will be greatly restricted. Further, an adequate development of spatial perceptions cannot be expected without a period of training corresponding somewhat to acquisition of normal visual spatial perceptions. The properties of objects must be learned and characteristics which permit rapid identification must be discovered. Spatial orientation training should include all types of moving the body through space, the manipulation of hands in eating, dressing and playing (1963,pp.129-30).

Spatial terms: The present study is also concerned with the blind child's ability to use spatial terms correctly. Several sub-scales require understanding of spatial terms if children are to respond correctly. Developmental literature, literature on blindness and empirical findings of orientation and mobility specialists and teachers of blind children provided the staff with source material for developing a working list of essential spatial terms.

Piaget (1959) (1960) reports that the idea of order-sequence appears at about ages 6 or 7. Ideas of horizontal, vertical, perpendicular, parallel, enclosure and angularity appear at about ages 9-10. Relations of right and left are beginning to be completely mastered by ages 11 and 12. Points of the compass are absolute values at ages 10 and 11. Weight and volume at ages 5-6 are perceived as synonymous, i.e., big thing - heavy; little thing - light.

As a part of their study on topographical and spatial orientation of the blind, Garry and Ascarelli (1960) classified spatial terms as follows:

| | |
|---|---|
| 1. Direction | facing, towards, forward, ahead, here, there, right, left, beside, etc. |
| 2. Cardinal Points | position of sun in morning, afternoon, indicators of direction, i.e.,going towards east. |
| 3. Distance | together, apart |
| 4. Location | middle, inside, corner |
| 5. Position | above, up, low underneath,etc.(1960,pp.29-33) |

Sensory Cues

The importance of providing training in the use of sensory cues is supported by studies which indicate that the initial sensory acuity of the blind, i.e., auditory acuity and acuity in responding to other non-visual cues is no better than that of the sighted. Whatever the blind achieve in the use of non-visual cues is the result of necessity, concentration, and increased instruction and practice (Plata, 1948; Mann and Boring, 1953; and Blade and Watson, 1955).

Lowenfeld (1963) states that the cutaneous senses, prehensile or grasping abilities, kinesthetic and auditory cues are brought into use according to the child's developmental level.

Auditory Cues

If the blind child cannot hear (because of some temporary condition), he becomes disoriented (Kohler, 1964, p.16; Dallenbach,1941).

Lowenfeld (1963) emphasizes the importance of hearing in communication, in locomotion and in interpreting the environment. Studies dealing with the relationships among intelligence, emotional stability and use of auditory cues tend to show that persons with higher verbal I.Q.'s and greater emotional stability seem to utilize auditory cues somewhat more adequately (Winer,1962).

Analysis of factors used to identify a particular sound indicate that there are four main components: (1) loudness, (2) pitch (3) quality and (4) temporal pattern or frequency. Sounds possessing all four components can be most easily identified. Objects in the environment may provide a "sound shadow" or an "echo". Multiple sounds mask out specific sound cues and sound absorption and refraction can dull or mellow the auditory cue(Wright,1963).

Sound localization studies indicate the importance of auditory cues in the individual's structuring of his spatial field. Wallach (1940) has shown that kinesthetic sensations provided by head movements integrate auditory sensations to provide perceptions of auditory space. It is noted that if the head is permitted to move when sounds are produced, a more accurate judgment is made of their location than if the head is immobilized.

The use of auditory cues in the perception of obstacles or objects has been the focus of a number of experiments ranging from the sonar system of bats and porpoises to applied studies involving blind persons. The findings of Supa, Cotzin and Dallenbach (1944) indicate that auditory sensation is a necessary and sufficient condition for the perception of obstacles by the blind. Cotzin and Dallenbach (1950) find that changes in pitch facilitate the perception of obstacles. Through systematic training, it is noted that the consistency and degree of discrimination in perception of obstacles can be developed and/or increased (Mauney and Worchel, 1951). Kohler (1964) notes that obstacle sense is reduced proportionately as sound is diminished.

### Tactual Cues

The significant role of the tactual sense is emphasized strongly in the literature. Tactual cues are crucially important in helping the blind child gain a reality-based orientation to his environment (Lowenfeld,1965). If blind children are to develop experientially-based concepts of objects which are reasonably comparable to those of seeing children, they must acquire such concepts through "touch observations." The ability to observe by means of touch and manipulation develops with experience. Tactual space perception of the blind differs from visual space perception of the seeing in that touch requires direct contact. Thus, the blind child can readily observe only those things accessible to him and must synthesize a series of tactual cues experienced successively (1963, p.233).

It has been suggested by researchers that when the object experienced is close to the child, vision and touch register much the same information. The components of tactual perception have been studied by Gibson (1963). He finds that the haptic system of the exploring hand is sensitive to the variables of solid rather than plane geometry. Little information is gained from flat surfaces but a great deal may be gained from exploring the shape of a solid object (pp. 19-20).

Two types of tactual perception were identified by Heller (1895): (1) the enveloping touch in which small objects are enfolded and perceived as a whole and (2) the analytic touch in which larger objects are observed one part at a time. A similar analysis referring to the sweeping, grasping, structuring or metric touch appears in the discussion of Garry and Ascarelli (1960) of the basic components in their training program.

## Kinesthetic Cues

Kinesthetic cues frequently are discussed in the literature on blindness. The close relationship of tactual and kinesthetic cues is emphasized by Lowenfeld (1963) as he points out that "...knowledge of the spatial qualities of objects can only be gained by touch observations in which kinesthetic sensations play a part."

Kinesthetic memory plays a vital role in mentally mapping one's environment," states Wallach (1940,p.340). Further, Villey (1930) refers to those kinesthetic cues which are related to locomotion as "muscular memory" and describes it as follows:

> It is by that, without counting steps and without looking at them, we know we have reached the top of our staircase. Our legs have registered, in a way, the number of contractions they had to make. Not only can muscular memory retain very well the height of a staircase, but also the dimentsions of a room and the distance between two walls. It instigates the blind man to repeat, with perfect regularity, the movements that have become habitual to him. (p.126).

However, no research studies on the use of kinesthetic cues by blind subjects have been reported. Theoretical discussions of these cues provide support for recognition of the operation of these cues in the orientation of blind persons. However, resources are not available for objectively scaling competency in using kinesthetic cues.

## Other Sensory Cues

Olfactory, gustatory and air current cues have received little or no research attention except as related to the deaf-blind. These studies are represented by Worchel and Dallenbach (1948, 1950) and Worchel and Mauney (1951). All of these studies give evidence that the blind are not superior to the seeing in the above mentioned areas of sensory acuteness, but afford limited data on the operation of these cues in relation to the focus of this study.

Lowenfeld (1963) notes that with the exception of taste, which permits touch observation, the other senses provide only those sensory cues which indicate the presence, location or non-tactual nature of certain objects. They do not provide information concerning dimension, volume, surface or weight; thus, they are supplementary to tactual cues in object identification.

These limitations of "other sensory cues" imply that the development of separate sub-scales on their use might not be justified. Use of such cues would be studied indirectly through assessment of the child's ability to use multiple sensory cues. Lowenfeld supports this point of view by stating that the child does not react with one sense but with his total sensory equipment; he hears, smells and, if given the opportunity, tastes. He notices changes of temperature and air currents and what they indicate.

### Body Percepts

Because of the information and comparative function of vision, perception of body structure by young sighted children is much less complex than for young children who are congenitally blind. However, in an experimental study with young sighted children (Vickers, et al., 1942) finds that young sighted children consistently indicate their ignorance of the correct names of the various parts of the body. Accurate perceptions of body structure and functions are important to the blind child in achieving freedom of movement; hence, a scale relating to recognition of parts of the body has been included in the instrument designed for this project.

Visual Imagery

The literature on blindness stresses the importance of the role of visual imagery. Three major generalizations can be made: (1) visual imagery is used by the adventitiously blind in the formulation of perceptions of tactually manipulated objects (Bartley, 1952); (2) visual imagery is used by the adventitiously blind in the structuring of space, i.e. cognitive mapping; and (3) the extent to which visual imagery is used depends largely on the age of onset of blindness.

The findings of Toth (1930) and Schlaegel (1953) strongly substantiate earlier research which shows that individuals who lose their sight before age 5 do not retain any useful visual imagery. Hence,any child who was adventitiously blind was excluded from our sample unless he had been blinded before age 5 and at least two years before the time of the study.

## SCALES RELATING TO MOTOR SKILLS AND SOCIAL COMPETENCE

Scales of motor development, social maturity and other aspects of development have served as resources for three aspects of this study: i.e., (1) as suggestions for specific sub-items; (2) as supporting data for sequencing of items within sub-scales and (3) as format guidelines.

The Vineland Social Maturity Scale (1936) can be used to assess a number of competencies which are basic to orientation and mobility performance. Items relating to walking, dressing and eating were especially useful.

The Maxfield-Buckholz Scale of Social Maturity for Use with Preschool Blind Children (1942)includes 95 items related to social competence. Eleven of the items relate specifically to skills in locomotion; many others relate to motor tasks and managing one's body in a variety of situations, as well as sensory cues and living skills.

The Cain-Levine Social Competency Scale (1963), although designed for use with severly mentally retarded, provides succinctly stated items in areas of personal care and some life activities which are related to orientation and mobility.

The California Infant Scale of Motor Development (1935),covering the first 36 months, consists of items selected from the works of Gesell, Oseretsky, Baldwin, Stecher and Shirley. Eight percent of the items emphasize locomotion and eleven percent are concerned with hand skills.

Motor Behavior During Infancy is a scale which was standardized on a population of 600 London children between two weeks and two years of age (Griffiths, 1954). The findings were summarized and discussed in a major work which provided relevant data for this study on the characteristic performance of normal two year olds.

Many studies have analyzed components of motor performance and development. Skills related to performance in basic motor skills for 4th, 5th and 6th grade students (i.e., running, jumping, throwing, catching) were studied by Latchow (1954, p.448). The study was replicated by Seils (1951, p. 260) involving children in grades 1, 2 and 3. The findings of both studies show that improvement of performance in motor skills is significantly correlated with age or developmental status.

The Oseretsky Scale, designed for age levels 4 to 16, consists of six sub-tests at each level which evaluate general static coordination, dynamic manual coordination, general dynamic coordination, motor speed, simultaneous movement, precision of movement and lack of superfluous movement. Edgar Doll (1946) translated the scale into English and Sloan (1950) reduced the number of items from 85 to 36. Researchers using these batteries have established norms for various age groups and identified sex differences in motor performance.

Seashore (1947) developed standard tasks (i.e., walking tasks on beams of various widths) to measure children's balance. Scores are obtained by noting the number of steps which can be taken. Reliable scores can be obtained on the basis of two trials. Peak performance on this test of balance was reached at about the age of eleven, after which a plateau occurs (Cratty, 1964, p.201).

## INSTRUCTIONAL GUIDES

Colleges, universities, public and private agencies have published brief descriptions of orientation and mobility skills and suggested instructional guides. A teacher's syllabus was developed for teachers as a part of a San Francisco State College summer program in mobility (Syllabus 1961). It includes helpful discussions of psychological principles relating to how blindness affects the total person; how blindness affects the professional worker's relationships with the blind person; teacher's responsibilities for orientation and mobility skills; relationships of orientation to the teacher; and qualifications of the orientator.

Major orientation and mobility terms are defined and common techniques are described in a report issued by Western Michigan University and reproduced in Long Cane News. The report was prepared by students in the orientation and mobility refresher course in Hartford (1964) conducted by the University (Long Cane News). Six lesson guides were developed around the following problems: (1) use of the sighted guide; (2) hand and forearm across the body; (3) trailing; (4) familiarization; (5) squaring off and direction taking;(6) developing proper concepts; (7) demonstration and explanation of the cane technique.

The "Orientation and Mobility Check Sheet" developed by Michigan State University is comprised of basic skills and understandings along with specific orientation and mobility proficiencies organized under the following twelve headings: (1) body orientation; (2) posture; (3) basic ability; (4) physical skills; (5) sound identification; (6) olfactory ability; (7) room orientation; (8) building orientation; (9) basic ability (outdoors); (10) basic ability; (11) shows knowledge of mobility terms; (12) knowledge of cane technique.

The Progress Report of the special project sponsored by Catholic Charities of the Archdiocese of Chicago presents an analysis of three major units: (1) Beginning Indoor Training (Home-School); (2) Beginning Outdoor Training (Residential Area); (3) Advanced Outdoor Travel (Business Area). Each unit contains a separate list of approximately sixteen achievements significant for orientation and mobility. The lists were intended to be used as a basis for checking student progress which results from the special training provided in the demonstration project.

## Summary

An extensive review of the literature has been incorporated in the report with the expectation that it might be helpful to others who undertake research in this field. However, it is obvious that there has been very limited effective research relating specifically to orientation and mobility needs of blind children. The extensive data available in developmental studies of normal children have valuable implications and give some direction in establishing a basis for orientation and mobility needs and skills of the blind. Developmental patterns of normal children are a helpful referent in implying the needs of the blind.

# PART III

# DEVELOPMENT OF THE SCALES

Each day the blind child, like other children, is gradually improving in his competency to live effectively in his world. He learns new concepts which are essential to an accurate understanding of his world; he learns strategies for exploring his world and gaining new information; he learns skills which help him to become more self-reliant and effective in meeting his developmental tasks.

Although the teacher can sense the blind child's progress over a period of time, he needs an observational guide to serve as a basis for recording more objectively the child's status with respect to many significant behaviors. Researchers also need such a guide to provide a basis for obtaining systematic and reasonably comparable observational data concerning children who have been exposed to different instructional programs.

The observational guides or scales developed in this study were intended to serve the following purposes:

1. To help teachers of blind children in assessing and reporting the child's developmental status with respect to significant orientation and mobility skills and related learnings.
2. To assist teachers of blind children to assess the child's readiness for next steps in instruction and thus establish more appropriate expectations for him
3. To provide (after try-out, revision and norming) a set of scales which can be used in research studies to evaluate the progress of groups of blind children who have been exposed to different instructional experiences.

## Aspects of Child Development

The staff decided to develop a set of scales which would be comprehensive enough to include all the major aspects of the blind child's development which are essential for his exploring and comprehending his environment, and attaining reasonable self-dependence. It was recognized, however, that some aspects of development would have to be excluded because progress could not be observed at a satisfactory level of reliability.

The staff agreed that it was not feasible to include all the basic living skills, but only those related to the child's orientation and mobility skills. For example, undressing and dressing one's self were included since they relate to body concept, involve knowledge of right and left, back and front and other spatial concepts. Learning table manners and cleaning up spilled liquids were excluded as been less closely related.

The staff also delimited the scope of its study by excluding many spatial concepts, the testing of which would require carefully standardized testing conditions and elaborate equipment. Investigation of language development was excluded as outside the scope of the study.

Since the scales were intended to be used by teachers of the blind, the staff delimited coverage to those aspects of development which require some guidance from adults to achieve optimum development in the blind. In other words, skills which develop adequately through maturation and self-imposed (often idiosyncratic) practice were excluded. Reaching and twirling are examples of skills excluded.

In some age scales which are used to assess general maturity (in social or intellectual development), items such as tying shoe laces appear at a single level and are not followed by other items representing the same type of skill. In this study, since the scale was intended to have diagnostic value, those aspects of development were included for which four or more levels of progress were observable. Hence, such items as turning on the radio, combing the hair, and the like, for which it was impossible to describe four or more levels of progress, were excluded.

Since this criterion was not firmly established as desirable until the jury edition had been formulated, four sub-scales (5a, 5d, 10b, and 12a) were included in the jury edition even though they had only three items.

## Source of Items

The items used in the preliminary draft of the scale came from a variety of sources.

Research Studies: Approximately half of the items were suggested by the findings of developmental studies reviewed in PART II. These developmental studies, which described motor skills and cognitive tasks of normal children, provided data which were helpful in designing and sequencing items. Reference has already been made to the list of orientation and mobility skills, supported by developmental referents, which was prepared by the staff as a synthesis of relevant findings and as resource material for item writing.

Lists of skills which have been prepared by students in summer training programs, as well as at Hines Veteran's Administration Hospital, provided a helpful framework for classifying items and aided the staff in the design of additional items.

Teachers of the Blind: Six experienced teachers of the blind were asked to observe blind children for a period of two weeks, recording systematically the skills which children exhibited and other skills which they lacked but obviously needed to manage their environment most effectively. Each of these teachers had had a college course in orientation and mobility. All of these teachers worked at the elementary level; four were identified with well established integrated programs and two were working in a large city school system which has a cooperative program.

Tests and Scales: The tests and scales reviewed in the last section of PART II were a helpful source for suggestions for items. The worksheets used by Norris, et al.(1957) and tests used by Garry and Ascarelli (1960) likewise proved helpful. The following scales were also reviewed carefully for suggestions:(1) Social Maturity Scale (1936); (2) Cain-Levine Social Competency Scale (1963) and (3) Maxfield-Buckholtz Scale of Social Maturity for use with preschool blind children (1942).

In no case were any of the items from these sources used directly in the scale. In most cases, the skill implied in the item had to be restated to fit the demands of the scales being constructed. For example, an item such as "removes coat" was restated as "removes zippered clothing".

Consultants: The special consultants for the project, who were identified earlier in the report, met with the project team on various occasions; they made suggestions with respect to additional items, revisions of items, and sequencing of items within each sub-scale.

## Criteria Used in Developing Sub-scales

In formulating groups of items which were likely to meet the scaling criterion of dimensionality (Green 1956) the committee agreed that each group of items, on a single aspect of development, should represent behaviors which could be sequenced along one of the following dimensions:

1. Requirement of prerequisite learnings (i.e. Item 2 of a sub-scale should require the prerequisite learning of Item 1; Item 3 should require the prerequisite learning of Items 1 and 2; etc).Example:

   Sub-scale 7a Counting for Orientation
   1 Counts by ones to five
   2 Uses counting to establish position
   3 Counts by 5's, 10's, to 100
   4 Understands ordinal numbers
   5 Demonstrates knowledge of equivalent values of coins

2. Reduction of assistance and/or reduction of cues. Example:

   Sub-scale 2c Running
   1 Runs with support from each side
   2 Runs with one hand held
   3 Runs with slight contact of sighted person
   4 Runs along side another person, using auditory cue
   5 Runs toward another person using auditory cue as direction taker
   6 Runs freely and willingly

3. Increasing difficulty of task (e.g. increasing complexity of task requirements). Example:
   Sub-scale 10c Understanding Turns
   1 Makes complete turn in place
   2 Turns around upon request to face opposite direction
   3 Turns quarter turn upon request
   4 Turns above given angles stated in terms of degrees
   5 Turns to establish a diagonal line of travel

In addition to taking care that items in each group represented variations on a single dimension (one of those listed above), other decisions were made by the staff concerning guidelines for formulating items.

1. Each item should describe a behavior which could be judged reliably by qualified observers. Verbal report by the child (such as the child's report that he undresses himself) should be used as a basis for judgment only when observation of the child in an action setting is inappropriate or not feasible, e.g. the item "undresses independently" for a school age child.

2. Care should be taken to make sure that items are stated in such a way as to represent the typical orientation of blind children, rather than the predominantly visual orientation of the observer. For example:
   2a-1 Explores objects within his brachial space
   7b-4 Locates objects which cast a sound shadow
   8b-2 Uses protective techniques in stooping for object

3. The highest item in any group of items or scale should represent behavior appropriate for a 12-year-old blind child (acceptable in school and home settings); i.e. no attempt should be made to assess especially high levels of performance which reflect special talent but are unrelated to effective functioning in school and home settings.

4. As many items as possible (which in the judgment of the staff describe distinguishable behaviors) should be included in the experimental edition of the scale; if jury judgment or actual tryout shows some of these items to be indistinguishable (i.e. to represent insignificant variations in performance) these items can be eliminated.

## Scale Design

Age scales are frequently used in assessing normal or exceptional children with respect to various aspects of physical, social or intellectual adjustment. An extensive field trial with representative samples of blind children would be necessary before the development of an age scale would be justified. However, the following procedures did seem justifiable at this stage of the investigation: (1) independent judgments were obtained from several qualified jury members regarding the significance and the sequencing of items in each of the fifty-eight sub-scales; (2) certain sub-scales and items within sub-scales were eliminated on the basis of staff assessment of jury data; and (3) the revised preliminary scales were tried out on twelve blind children to make a preliminary check on their scalability and obtain information which would be helpful in the revision of the scale and the preparation of a manual.

As a result of these procedures, each of 288 items, organized into 58 sub-scales, was subjected to the independent judgment of nine qualified jury members. Sub-scales in which four or more items survived the hurdle of reasonable jury agreement on sequence were then given a preliminary test for uni-dimensionality on the basis of field-trial data. Later, when the results of norming on representative samples of age groups of blind children became available*, the lowest age at which 50-60 percent of blind children succeed on each item in each sub-scale can be determined. After these results are available, the items can be organized by age level for some purposes; for other purposes, the original Guttman-type scales in each aspect of development can be used.

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*Project Proposal # 6-2464

## Obtaining Jury Reactions to Preliminary Edition

Before the sub-scales were administered to blind children, the staff wanted to obtain the reactions of qualified jurors concerning the importance of each sub-scale item so that they could eliminate any deemed not significant. They also wanted to determine whether the independent judgments of jurors would show sufficiently high agreement when they were asked to arrange the randomized items of each sub-scale in the best order (with respect to developmental sequence and/or increasing difficulty).

Each member of the jury received the materials reproduced in Appendix A. This included (1) the Scales, with items arranged in random order; (2) definition of orientation and mobility terms; (3) instructions for indicating the developmental order of items of each sub-scale; and (4) instructions for rating the significance of items of each sub-scale.

In the jury edition of the scales (Appendix A) the fifty-eight sub-scales are presented with both sub-scales and items within sub-scales typed in the order in which they were submitted to jurors. The sub-scales were grouped in the jury edition under headings which corresponded to staff judgment regarding logical groupings.

| | |
|---|---|
| Part A | Locomotion |
| Part B | Sensory Cues in Orientation and Mobility |
| Part C | Basic Experiences Related to Orientation and Mobility |
| Part D | Interest in New Experiences and Moving Out |
| Part E | Basic Techniques of Orientation and Mobility |
| Part F | Basic Living Skills Related to Orientation and Mobility |

It is quite possible that, following the statistical analysis of results from the more extensive field-trial and norming (under Project # 6-2464), reorganization of sub-scales under other headings may be suggested.

In the jury edition the order of items within each sub-scale was randomized. The reader will note in examining the jury edition that explanatory comments and illustrations were provided in the right-hand column to assist the jurors in interpreting the item content.

All teachers who served on the jury had had a course in Orientation and Mobility. Orientation and mobility specialists, of course, were intimately acquainted with the field. Of the three child development specialists, one was well acquainted with blind children.

The jurors' ordering of the items of each sub-scale was facilitated by issuing slips upon which each item was typed. The slips for each sub-scale could easily be arranged and rearranged by a juror until he decided on a sequence which represented his final judgment concerning the best developmental order. When the order he perceived as best had been determined, he could transfer the ranks assigned each item to the appropriate spaces on his copy of the Scale.

### Criteria Used in Judging Sub-scales and Items

The final judgment on whether a specific sub-scale (or item therein) should be eliminated or revised was made on the basis of all relevant data from both the jury reaction and the preliminary field-trial (reported in PART IV). The staff based these judgments on a list of criteria which they formulated to serve as a basis for appraising each of the 58 sub-scales and the 288 items within them.

The following criteria apply to each sub-scale as a whole:

Criterion a: Inter-judge agreement on rank of sub-scale items in developmental sequence.

The inter-judge reliability coefficient ($r_{Sav.}$) for jurors' ratings on sequence shall be .60 or higher and significant at the 1 percent level.

Note: Eight items (8c, 9b, 11b, 13b, 15a, 15c, 15d, and 16b) were considered to satisfy criterion a, even though the $r_{Sav.}$ for all jurors was below .60; for these three items, the orientation and mobility specialists showed very close agreement (an $r_{Sav.}$ of .80 or higher).

Criterion b: Scalability of Items

The Index of Consistency, based on the results of the preliminary field trial, shall be .50 or higher. This standard for scalability is suggested by: Bert F. Green, "A Method of Scalogram Analysis Using Summary Statistics," Psychometrika, 21:79-88, March, 1956.

The following criteria apply to individual items within sub-scales:

Criterion c: Significance

The median significance rating shall be 2.25 or higher on a 3-point scale, with 1 representing "of little significance"; 2, "of average significance" and 3, "very significant".

Criterion d: Inter-judge agreement on rank for each specific item

The variability of jurors' ranks, as measured by Q (the semi-interquartile rante), shall not exceed .2 x (maximum range in ranks); e.g. if there are seven items in a sub-scale, the maximum range in ranks is 1 to 7, or a range of 6; hence the maximum Q value to meet Criterion d for this item would be .2 (6) or 1.2.

Criterion e: Feasibility of Observation

Performance on the item shall be observable during the field trial for at least 75 percent of the children.

## Results on Criteria a, c, and d

With respect to Criterion a (inter-judge agreement on the ranking of items in developmental sequence), the correlation coefficients for "all jurors" ranged from a low of -.11 for sub-scale 5d, Using Differences in Elevation, to a high of 1.00 for sub-scale 12a, Crawling. The median inter-judge correlation was .65. Thirty-three of the sub-scales had a correlation of .60 or above and thus met Criterion a. The staff decided to consider that eight additional sub-scales (8c, 9b, 11b, 13b, 15a, 15c, 15d, and 16b) had, in effect, satisfied Criterion a since the orientation and mobility specialists showed marked agreement among themselves (an $r_{s_{av.}}$ of .80 or higher). Hence, 41 sub-scales or 71 percent met Criterion a. For information concerning those sub-scales which failed to meet Criterion a, the reader is referred to TABLES II, III, and IV in PART IV.

As one might expect, jurors tended to agree more closely with other jurors in their own sub-groups than with the group as a whole. That is, when inter-judge correlations were computed for the child development specialists, the median correlation was .80; for orientation and mobility specialists, the median was .81. Both of these median r's indicate a very high degree of agreement on the rating of items in developmental order within sub-scales. The median $r_{s_{av.}}$ for teachers of the blind was .65; on the average, they showed no greater agreement among themselves than did the nine jurors as a combined group.

Two other criteria (i.e. Criteria c and d) were also based on juror's judgements. These criteria applied to individual items within sub-scales. With respect to Criterion c on significance, the jurors' reactions were especially favorable.

Of the 288 items, 104, or 36 percent, were rated as "very significant" by all judges; an additional 117, or 41 percent, were rated "very significant" by all but one judge. The median significance ratings for all items was 2.92, with 3.00 representing the highest possible rating. Only two items received a significance rating below 2.25, which the staff had selected as a minimum requirement for inclusion in the field trial edition.

Criterion d was concerned with the variability of jurors' ratings on individual items. In other words, jurors might show an adequate degree of inter-judge agreement on the items of a sub-scale as a whole, but show considerable variability in their ratings on one or more items. For example, the correlation for Sub-Scale 6c, "Using Right and Left" was .64, which meets Criterion a; however, judges did not show an adequate amount of agreement with respect to ranks assigned item 4, "Distinguishes right and left in the environment". The Q value of .94 for this item exceeded the maximum value for Criterion d for a four-item sub-scale. Another example of failure to meet Criterion d is item 4 of Sub-scale 1b on Using Auditory Cues--Orientation; its Q of 1.17 exceeded the maximum value for a 6-item sub-scale; however, since one item could easily be omitted from a six-item sub-scale, Sub-scale 1b, as a whole, would be considered as metting this criterion. Sixty items, or 21 percent, failed to meet Criterion d. These items appeared in 29 sub-scales; however nine of these were like Sub-scale 1b cited above in that they still had four or more items which met Criterion d. Hence, only twenty sub-scales failed to meet Criterion d. Of these, twelve had also failed to meet Criterion a. All data on jury ratings on each sub-scale have been summarized in TABLE V of PART IV of the report, since it is helpful to review these data in relation to the data on scalability obtained in the preliminary field trial. A summary report on the extent to which various criteria were met is given in TABLES II, III, and IV of PART IV. The reader will note that fifteen of the forty-two sub-scales included in the field trial (TABLE III and IV) failed to meet one or two of the jury criteria. The real test of the scalability of these items, however, lies in experience in the field trial. The jury data were of assistance in helping the staff reduce the field-trial edition from 58 to 42 trials. However, fifteen sub-scales which gave promise of providing highly useful data to professional workers, were retained despite failure to meet one or two of the jury criteria. As the findings in PART IV will show, the staff decisions to include these sub-scales in the field trial were justified in most cases. Of the fifteen sub-scales with marginal data on jury criteria, eight satisfied criteria on scalability and an additional six showed promise of being scalable when they are tried on a larger sample of blind children which includes more preschool children and/or older children.

# PART IV

## RESULTS OF THE FIELD TRIAL AND RECOMMENDATIONS

The Project Proposal included plans for a field trial of the scales since it seemed essential to gain some insight into how the instrument would stand up under actual test situations. The forty-two sub-scales of the fifty-eight which were evaluated by the jury and judged to be the most promising, were used in the field trial instrument. Each of these sub-scales has been reproduced as an aid to the reader in connection with the analysis of data which is reported later in the section. Also, the sixteen sub-scales which were eliminated by the jury have been reproduced in order to provide a full report on the original fifty-eight sub-scales.

### DESCRIPTION OF FIELD TRIAL

The specific purposes of the field trial as defined by the staff were:

1. To check the scalability of each sub-scale
2. To make a general evaluation of the appropriateness of each sub-scale
3. To secure additional information which might be helpful in the revision of the scales and the development of the manual

#### Preparation of Instrument

Each of the forty-two sub-scales was prepared for field trial by:

1. Describing the setting which would likely motivate the desired behavior and which would allow the child to demonstrate the behavior

2. Describing the directions for administration

3. Indicating the materials needed to test each skill adequately

4. Describing as objectively as possible the minimum performance required for passing

The following sub-scale has been selected to illustrate, for the reader, the format employed in the field trial edition:

USING AUDITORY CUES--GAMES 1a

| | ITEM | INSTRUCTIONS FOR ADMINISTRATION | STANDARDS FOR PASSING |
|---|---|---|---|
| 1 | Moves in direction of auditory cue. | Say:"Come toward me when I clap my hands." Move approximately 20 ft. away from child. Clap hands continuously. | Moves to examiner. |
| 2 | Throws or rolls ball in direction of auditory cue. | Say:"Throw the ball to me." (distance of approximately 10 feet) (10"-12" ball.) | Throws or rolls ball ball toward examiner. Ignore efficiency of motor skill. |
| 3 | Bounces ball to himself, using sound of rebound to catch it. | Say: "Bounce the ball and catch it." | Catches ball three out of five times. If obstacle such as his toe is encountered, allow retrial. |
| 4 | Uses rebound sound to catch ball bounced to him by another person. | Say:"See if you can catch it when I bounce it to you." Bounce ball to child. Be sure ball bounces in front of him and within his reach. | Child touches ball three times out of five times. Motor coordination required to catch and hold ball not essential. |

The kit of test materials included a 12" ball, a ping-pong ball, a tennis ball, blocks, a spool, a tin box, a scallop shell, a bottle cap, hot and cold water, a sweater with large buttons and a balance board consisting of two 2" x 4" boards, totaling approximately 8 feet.

### Plan of Administration

The school-age children were tested at their schools and preschool children in their homes. Two examiners worked with each child; one administering and scoring the scale, the other observing and scoring independently.

The sub-scales were grouped in a sequence convenient and economical for testing. All the sub-scales which could be tested indoors were grouped together and all those which could best be tested outdoors were grouped together. Within these larger groupings, sub-scales were ordered by similarity of tasks or type of a specific environmental setting needed.

The sub-scales were administered in the order listed below:

Testing Done Inside:

9d Seating Oneself
2a Exploring
13b Familiarization
3b Using Tactual Cues
7a Counting
15a Idea of Size
1c Auditory Cues-Voices
1a Auditory Cues-Games
17c Kinesthetic Cues
14c Undressing
14a Dressing
14d Parts of the Body
8c Directing Taking
9c Doors, Windows, Drawers
10c Understanding Turns
12c Hopping and Skipping
8b Search Pattern
11d Balance
14b Drinking
3c Temperature Cues
12d Moving Indoors
6d Street Patterns
13c Using Telephone
1b Auditory Cues-Orientation

Testing Done Outside:

1b Auditory Cues-Orientation
7b Auditory Cues-Travel
1d Multiple Auditory Cues
2b Walking
7c Sighted Guide
5b Trailing
4c Travel about the School
6c Right and Left
6b Cardinal Directions
3a Difference in Terrain Textures
4a Using Routes
16d Air Currents
9b School Bus
9a Automobile
11c Steps
2c Running
13a Moving-Outdoors
12b Climbing
2d Jumping

Subjects: Twelve children were tested during the field trial. Each age period from 2 to 12 years was represented, including two who were six years old. Seven of the sample were girls. All were totally blind although two had had some vision before the age of 3½. Of the sample, nine were in elementary school, one in nursery school, and two were preschool who were receiving help through the Field Services for Preschool Children, California School for the Blind. All of the children were judged to be of average or above average intelligence and had no other apparent handicap in addition to the visual. The time for administration of the instrument with the child averaged about one hour and forty-five minutes. The age,sex and grade level of the subjects are presented in TABLE I below.

TABLE I

AGE,SEX AND GRADE OF SUBJECTS TESTED IN THE FIELD TRIAL OF THE SCALES

| NAME | AGE* | SEX | GRADE | SCHOOL |
|---|---|---|---|---|
| Ann | 12- 9 | F | 7th | Temple City |
| Bob | 11-10 | M | 5th | Frances Blend |
| Cal | 10- 3 | M | 3rd | Frances Blend |
| Dot | 9- 9 | F | 4rd | Frances Blend |
| Eva | 8- 4 | F | 2nd | Azusa |
| Fred | 7- 7 | M | 2nd | Santa Monica |
| Gay** | 6- 2 | F | 1st | Frances Blend |
| Hal*** | 6- 2 | M | Kgtn | Santa Monica |
| Iva | 5- 6 | F | Kgtn | Frances Blend |
| Jan | 4- 3 | F | Nursery | Private |
| Ken | 3- 1 | M | Preschool | -- |
| Liz | 2- 1 | F | Preschool | -- |

*As of date of field trial
**Lost sight at age one
***Lost sight at age 3½

# FINDINGS

## Findings on Scalability of Items

As was pointed out in PART III, 16 sub-scales were eliminated before the field trial as a result of the staff's assessment of all relevant statistical data as well as their judgment on the potential values of each sub-scale. The jury data on these 16 sub-scales are summarized in TABLE II.

Of the 42 sub-scales which were administered in the field trial, there were 15 for which the Index of Consistency could not be computed. Criterion data for these sub-scales are summarized in TABLE III. Six of these sub-scales (2a, 9d, 12b, 14b, and 15a) proved to be too easy for the subjects. Conclusions on scalability, based on the pattern of successes and failures, are not justified when there are only a few scattered failures. Field trial data on a larger number of preschool children would make it possible to test the scalability of these sub-scales.

Four sub-scales (5b, 6b, 7c and 8b) proved to be too difficult. The staff concluded that there were so few successes on these sub-scales that computation of the Index of Consistency was not justified. When a larger number of older children are tested during the norming process next year, these sub-scales should prove to be scalable.

For the five other sub-scales listed in TABLE III (1c, 3a, 9b, 12d, and 13a) it was impossible to obtain data on one or more of the items. In fact, for sub-scales 9b, 12d and 13a, none of the sub-scale items could be observed for the majority of the subjects. Sub-scales 12d and 13a require observation at home and may have to be eliminated; sub-scale 9b should be observable in the next field trial.

TABLE IV summarizes criterion data for the 27 sub-scales for which scalability could be measured by computing the Index of Consistency. Only

## TABLE II

## CRITERION DATA ON SIXTEEN SUB-SCALES ELIMINATED BEFORE FIELD TRIAL

| Ref. No. & Title of Sub-Scale | No. of Items | Inter-Judge Correlation (Criterion a) | Items Failing To Meet Criterion | |
|---|---|---|---|---|
| | | | c | d |
| 3d Olfactory cues | 4 | (.46**)[a] | 2,3 | -- |
| 5a Landmark patterns | 3 | (.17) | 1,2,3 | -- |
| 5d Diff. in elevation | 3 | (-.11) | 1,2,3 | -- |
| 8a Hand and forearm | 4 | .62** | 2 | -- |
| 10b Shaking hands | 3 | (.42**) | 1,2 | -- |
| 11a Orient. in eating | 4 | .82** O&M; .84** | - - | -- |
| 11b Use utensils - eating | 7 | (.52**) | 4,5 | -- |
| 12a Crawling | 3 | 1.00 | | 1 |
| 15b Materials and tools | 4 | (.02) | 1,2,3,4 | -- |
| 15c Idea of shape | 6 | .46** O&M; .91** | 2,6 | -- |
| 15d Idea of position and location | 4 | .27* O&M; .87* | 3,4 | -- |
| 16b Idea of weight | 4 | .38** O&M; 1.00** | - - | -- |
| 16c Idea of distance | 6 | .62** | 3 | -- |
| 17a Experiences - eating | 5 | (.35**) | 2,5 | -- |
| 17b Accept. and showing affections | 4 | (.43**) | - - | -- |
| 17d Simple tools | 5 | (.34**) | 1,3 | -- |

* Significant at the 5 percent level
** Significant at the 1 percent level
[a] Correlation coefficients in parentheses failed to meet Criterion a

NOTE: All sub-scales listed above except 11b, 15c, 16b, 16c, and 17b failed to meet the following criterion: There shall be at least four items on the sub-scale on which the median rank assigned by jurors differs from those of adjacent items by at least .50. Items are considered adjacent when their medians rank just above and below the item being considered.

## TABLE III

## CRITERION DATA ON FIFTEEN SUB-SCALES ADMINISTERED IN FIELD TRIAL FOR WHICH INDEX OF CONSISTENCY COULD NOT BE COMPUTED

| Ref. No. & Title of Sub-Scale | | No. of Items | Inter-Judge Correlation (Criterion a) | Items Failing To Meet Criterion a | | | Major Reason Index Could Not Be Computed |
|---|---|---|---|---|---|---|---|
| | | | | c | d | e | |
| 1c | Aud. cues voices | 5 | .73** | 1,5 | -- | 2,3 | Items 2 & 3 not observable |
| 2a | Exploring | 4 | .79** | -- | -- | -- | Easy; only 15 percent failure |
| 3a | Diff. in terrain texture | 4 | .79** | -- | -- | -- | Item 4 could not be observed |
| 5b | Trailing | 5 | .62** | -- | -- | 5 | Difficult; no success on items 3, 4, & 5 |
| 6b | Cardinal directions | 6[b] | (.46**)[a] | 4,5 | -- | -- | Difficult; only 13 percent successes |
| 7c | Sighted guide | 8 | .81** | -- | -- | -- | Difficult; only 23 percent successes |
| 8b | Search pattern | 4 | (.42**) | 1,4 | -- | -- | Difficult; only 19 percent successes |
| 9b | School bus | 5[c] | .49** O&M--.90** | 3,4,5 | -- | 1,2,3<br>4,5 | Not observable for 7 subjects |
| 9d | Seating oneself | 4 | .84** | 4 | -- | -- | Easy; only 10 percent failure |
| 12b | Climbing | 7 | .89** | -- | -- | -- | Easy; only 6 percent failure |
| 12d | Moving-indoors | 6 | .78** | 1 | -- | 1,2,3<br>4,5,6 | Not observable for 9 subjects |
| 13a | Moving-outdoors | 7 | .78** | -- | -- | 1,2,3<br>4,5,6 | Not observable for 9 subjects |
| 14b | Drinking | 5 | .78** | -- | -- | -- | Easy; only 10 percent failure |
| 14d | Parts of body | 4 | .69** | -- | -- | -- | Easy; only 13 percent failure |
| 15a | Idea of size | 4 | .43** O&M--1.00** | 2 | -- | -- | Easy; only two failures each on items 1, 2, 3 |

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* Significant at the .05 percent level

** Significant at the .01 percent level

[a] Correlations in parentheses failed to meet Criterion a

[b] Only five items were included in the field-trial edition

[c] Six items were included in the field trial edition into two items with reference numbers 2a and 2b

one sub-scale (17c Using Kinesthetic Cues) failed to meet Criterion b, i.e., an Index of Consistency of .50 or higher. In this sub-scale and two others (1b Using Auditory Cues) and (4c Traveling About School) a single item failed to meet Criterion e (observable for at least 75 percent of the children). However, sub-scales 1b and 4c have six and seven items respectively; hence individual items, rather than the sub-scales, would be discarded. In other words, of the 27 sub-scales for which the preliminary field trial data are adequate for scaling purposes, only sub-scale 17c failed to meet the two field trial criteria (Criteria b and e).

The exclusion of sub-scales from the more extensive field trial and norming process will again be made on the basis of staff assessment of all relevant data. Specific recommendations concerning the exclusion of four sub-scales (12d, 13a, 16d and 17c) are made at the conclusion of this chapter, along with justification for combining the best items from pairs of sub-scales (1a, and 1c; 1b and 7b; 3a and 3b). Recommendations are also presented concerning the omission of three items and the revision of twelve others.

Presentation of Field Trial Data on Each of the 58 Sub-Scales

After careful consideration, the staff decided that readers should have an opportunity to study all the relevant data on each of the 288 items included in the original sub-scales (jury edition) and that all the relevant data for each sub-scale should be combined on a single page. Sub-scales excluded by the staff before field trial may still have promise; hence, a summary of jurors' reactions on these sub-scales may prove of value to other investigators.

At the top of each page of TABLE V, the items of one sub-scale are listed. If the wording of any item has been changed, a footnote index refers the interested reader to the jury edition for the original wording.

## TABLE IV

## CRITERION DATA ON TWENTY-SEVEN SUB-SCALES FOR WHICH THE INDEX OF CONSISTENCY COULD BE COMPUTED

| Ref. No. & Title of Sub-Scale | | No. of Items | Inter-Judge Correlation (Criterion a) | Index of Consistency (Criterion b) | Items Failing To Meet Criteria | | |
|---|---|---|---|---|---|---|---|
| | | | | | c | d | e |
| 1a | Aud. cues - games | 4 | (.44**)[a] | .74 | -- | -- | -- |
| 1b | Aud. cues - orient. | 6 | .62** | .63 | 4 | -- | 6 |
| 1d | Multiple aud. cues | 4 | .81** | .83 | -- | -- | -- |
| 2b | Walking | 7 | .79** | .50 | -- | -- | -- |
| 2c | Running | 6 | .92** | 1.00 | -- | 1 | -- |
| 2d | Jumping | 6 | .75** | 1.00 | -- | -- | -- |
| 3b | Tactual cues | 5 | .70** | .60 | -- | -- | -- |
| 3c | Temperature cues | 4 | (.17) | .85 | 1,2,3,4 | -- | -- |
| 4a | Using routes | 7 | .93** | 1.00 | -- | -- | -- |
| 4c | Travel at school | 7 | .90** | .50 | -- | -- | 6 |
| 6c | Right and left | 4 | .64** | 1.00 | 4 | -- | -- |
| 6d | Street patterns | 6 | (.47**) | .80 | 3,4,6 | -- | -- |
| 7a | Counting | 5 | .66** | 1.00 | -- | -- | -- |
| 7b | Aud. cues - travel | 5[b] | .86** | 1.00 | -- | -- | -- |
| 8c | Direction taking | 5 | .21* O&M--.81 | 1.00 | 3 | -- | -- |
| 9a | Automobile | 4 | (.41**) | 1.00 | 1,2,3,4 | -- | -- |
| 9c | Doors, windows, drawers | 4 | .62** | .80 | 2,3 | -- | 4 |
| 10c | Understand turns | 5 | .69** | .70 | -- | -- | -- |
| 11c | Steps | 4 | .69** | 1.00 | -- | -- | -- |
| 11d | Balance | 6[c] | (.44**) | 1.00 | 4 | -- | -- |
| 12c | Hopping and skipping | 5 | (.29**) | .71 | 1,4 | -- | -- |
| 13b | Familiarization | 5[b] | .58** O&M--.94** | 1.00 | -- | -- | -- |
| 13c | Using telephone | 5[b] | .96** | 1.00 | -- | -- | -- |
| 14a | Dressing | 7[d] | .91** | 1.00 | -- | -- | -- |
| 14c | Undressing | 6 | .87** | 1.00 | -- | -- | -- |
| 16d | Air currents | 5 | (.14) | .75 | 1,2,4,5 | -- | -- |
| 17c | Kinesthetic cues | 4 | .76** | (.43) | -- | -- | 4 |

* Significant at the .05 percent level

** Significant at the .01 percent level

[a] Correlations in parenthesis failed to meet Criterian a

[b] Only four items included in field trial edition

[c] Only five items included in field trial edition

[d] Only six items included in field trial edition

The only data not summarized in TABLE V are the jurors' reactions for four items which were eliminated before the field trial. The interested reader can find in APPENDIX B the original data on jury reactions for these items.

TABLE V is a long and elaborate table, 58 pages in length, with one page for each sub-scale. Hence, the next section explains the arrangement of TABLE V and assists the reader in interpreting the field trial data and jury ratings. Technical terms are explained and the data for sub-scale 1a are interpreted as illustrative.

Explanation of TABLE V

In the upper half of the tabulation for each sub-scale, the results of the field trial are given when available, i.e., field trial data are given for each of the 42 sub-scales which were selected for try-out by the staff.

Pass and fail data for each child (indicated by + and -, respectively) are recorded in the body of the table for each item of the sub-scale. Items are arranged in rank order, based on item difficulty (number of children passing each item), with the easiest item at the right. In case of ties on difficulty, the items have been arranged by Reference Number.

For most items, the number of passes and fails adds to 12(the number of children observed). If the number of "passes" and "fails" for an item does not add to 12, the reader will note that the letters N.O. or N.V. has been entered for one or more children.

> N.O. indicates that the item was not observable because of factors which may not recur in the regular use of the instrument (e.g. construction on the playground or no opportunity to visit the child's home).

> N.V. indicates that, in the opinion of the staff members who administered the scale, the item is not valid (i.e., cannot be assessed with validity under typical conditions).

The reference Numbers of items, as shown in the table heading, indicate the sequence in which items were originally arranged by the staff, with the number "1" indicating the lowest or easiest level. In most cases, field trial data have confirmed this order of difficulty. There are exceptions, however. In the tabulation for sub-scale 1b, for example, the reader will note that the items ranked 4th or 5th by the staff have been reversed in order of difficulty by the field trial data.

Children are listed in order of Scale Score, i.e., number of sub-scale items passed. In the case of ties, children are listed in the order of Chronological Age (C. A.) within each Scale-Score grouping, e.g., the first six children in the table for sub-scale la are listed by C. A. within the sub-group that earned a Scale Score of 4. Fictitious names have been assigned to children in order of C. A. (at date of field trial). Hence, if names are listed in alphabetical order for a sub-scale, performance on that sub-scale is perfectly correlated with C. A. for this group of subjects.

An Index of Consistency of .50 or higher for a sub-scale indicates that the items meet the Guttman Standard of Scalability.* The index of .74 for sub-scale la clearly meets this standard.

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*Formulas used in obtaining this index were taken from Bert F. Green, "A Method of Scalogram Analysis Using Summary Statistics," Psychometrika, 21:79-88, March ,1956.

Only cases with complete data for all items were used in computing the Index of Consistency.

Interpretation of Jury Ratings

Each juror was asked to rank the items of each sub-scale in terms of their order in a developmental sequence. The median rank and variability (Q) is given for each item. For example, for sub-scale 1a (on the first page of the table), the median ranks assigned items 1 through 4 were 1.06, 2.14, 2.80 and 3.60, respectively, indicating considerable agreement with preliminary staff ratings. The Q values for these same items were .28, .33, .56 and .50. Since Q represents one-half the range between the first and third quartile points, it is clear that jurors' ratings for the items of sub-scale 1a clustered quite closely around the medians.

Each juror was also asked to rate each item as follows:

v = very significant
s = of average significance
l = of little imporantce

In order to compute median ratings, numerical values were assigned as follows:

v = 3
s = 2
l = 1

For sub-scale 1a, item 3 had the lowest significance rating of 2.38 while item 1 had the highest, with all jurors giving it the highest possible rating.

The average inter-judge correlations (on rank in developmental sequence) are given next--for all jurors and for each sub-group of jurors.

As a measure of correlation, Kendall's coefficient of concordance (W) was computed; W values were then translated into values of $r_{S_{av.}}$ (which approximates the average of all possible rank-order intercorrelations between judges). For sub-scale la, the correlation coefficient for all jurors was .44; the child development specialists and the orientation and mobility specialists agreed reasonably well among themselves with each sub-group having a correlation coefficient of .60; teachers of the blind did not agree in their ratings with an r of -.14. For a few sub-scales, the correlation for one of the sub-groups is omitted since one or more of the specialists reported inability to rank the items within that sub-scale.

According to established practice, asterisks have been used to indicate the level of statistical significance of each correlation coefficient (i.e., the statistical significance of the W on which the $r_{S_{av.}}$ was based). Two asterisks following a correlation indicate significance at the .01 level. One asterisk indicates significance at the .05 level. For sub-scale la, the coefficient for all jurors is significant at the 1 percent level; none of the coefficients for the three sub-groups is statistically significant.

It was noted earlier that 16 of the 58 sub-scales were eliminated by the jury before the field trial. These items failed to satisfy one or more of the criteria established by the staff. However, these 16 sub-scales are included in TABLE V in order to report the jury data on them.

Naturally, data from preliminary field trials are not available for these sub-scales.

## TABLE V

## RESULTS OF FIELD TRIAL AND JURY RATINGS FOR ALL SUB-SCALES SUBMITTED TO THE JURY

### USING AUDITORY CUES--GAMES 1a

1 Moves in direction of an auditory cue

2 Throws or rolls ball in direction of auditory cue#

3 Bounces ball to himself, using sound of rebound to catch it

4 Uses rebound sound to catch ball bounced to him by another person

| PUPILS | C.A. | Ref. No.: 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|
| Ann | 12-9 | + | + | + | + | 4 | |
| Bob | 11-10 | + | + | + | + | 4 | |
| Cal | 10-3 | + | + | + | + | 4 | |
| Fred | 7-7 | + | + | + | + | 4 | |
| Hal | 6-2 | + | + | + | + | 4 | |
| Iva | 5-6 | + | + | + | + | 4 | |
| Dot | 9-9 | - | + | + | + | 3 | |
| Eva | 8-4 | + | - | + | + | 3 | |
| Gay | 6-2 | - | + | + | + | 3 | |
| Jan | 4-3 | - | - | + | + | 2 | |
| Ken | 3-1 | - | - | - | + | 1 | |
| Liz | 2-1 | - | - | - | + | 1 | |
| FIELD TRIAL DATA | | | | | | | |
| No. Passing Item | | 7 | 8 | 10 | 12 | | |
| No. Failing Item | | 5 | 4 | 2 | 0 | | |
| Index of Consistency | | | | | | | .74 |
| JURY RATINGS | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | | 3.60 | 2.80 | 2.14 | 1.06 | | |
| Variability (Q Values) | | .50 | .56 | .33 | .28 | | |
| Median Significance Ratings | | 2.63 | 2.38 | 2.80 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .44** |
| Ch.Dev.Specialists | | | | | | | .60 |
| O. & M. Specialists | | | | | | | .60 |
| Teachers of the Blind | | | | | | | -.14 |

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*Significant at the .05 level

**Significant at the .01 level

#Wording of this item was modified as a result of staff assessment of jury reactions and/or recommendations by consultants

## TABLE V (continued)

USING AUDITORY CUES--ORIENTATION 1b

1 Reacts to new sound

2 Indicates localization of sound in relation to self by turning or pointing

3 Uses sound cues as landmark or point of information

4 Makes sounds to receive echoes

5 Uses increase in intensity of cues as sign of approach

6 Uses familiar sound to estimate distances

| PUPILS | C.A. | Ref.No.: | 6 | 4 | 5 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | | N.V. | + | + | + | + | + | 5 | |
| Fred | 7- 7 | | N.V. | + | + | + | + | + | 5 | |
| Gay | 6- 2 | | N.V. | + | + | + | + | + | 5 | |
| Iva | 5- 6 | | N.V. | + | + | + | + | + | 5 | |
| Ann | 12- 9 | | N.V. | - | + | + | + | + | 4 | |
| Cal | 10- 3 | | N.V. | - | + | + | + | + | 4 | |
| Eva | 8- 4 | | N.V. | - | + | + | + | + | 4 | |
| Hal | 6- 2 | | N.V. | - | - | + | + | + | 3 | |
| Jan | 4- 3 | | N.V. | - | - | + | + | + | 3 | |
| Dot | 9- 9 | | N.V. | - | - | + | - | + | 2 | |
| Ken | 3- 1 | | N.V. | - | - | - | + | + | 2 | |
| Liz | 2- 1 | | N.V. | - | - | - | - | + | 1 | |
| FIELD TRIAL DATA | | | | | | | | | | |
| No. Passing Item | | | | 4 | 7 | 10 | 10 | 12 | | |
| No. Failing Item | | | | 8 | 5 | 2 | 2 | 0 | | |
| Index of Consistency | | | | | | | | | | .63 |
| JURY RATINGS | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | |
| Median Ratings | | | 5.25 | 2.75 | 5.50 | 3.80 | 2.40 | 1.06 | | |
| Variability (Q Values) | | | .85 | 1.17 | .63 | .56 | .72 | .28 | | |
| Median Significance Ratings | | | 3.00 | 2.33 | 2.92 | 3.00 | 3.00 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | | |
| All Jurors | | | | | | | | | | .62** |
| Ch.Dev.Specialists | | | | | | | | | | .28 |
| O. & M. Specialists | | | | | | | | | | .88** |
| Teachers of the Blind | | | | | | | | | | .52* |

## TABLE V (continued)

### USING AUDITORY CUES--HUMAN VOICES 1c

1 Localizes a voice

2 Identifies voices of different persons in the family

3 Notices strange voice

4 Discriminates between different voices to establish position of person

5 Follows familiar voice to establish line of travel

| PUPILS | C.A. | Ref.No.: | 3 | 2 | 4 | 5 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Jan | 4-3 | | + | + | + | + | + | 5 | |
| Fred | 7-7 | | N.O.[a] | + | + | + | + | 4 | |
| Hal | 6-2 | | N.O.[a] | + | + | + | + | 4 | |
| Ken | 3-1 | | + | + | - | + | + | 4 | |
| Ann | 12-9 | | N.O.[a] | N.O.[b] | + | + | + | 3 | |
| Bob | 11-10 | | N.O.[a] | N.O.[b] | + | + | + | 3 | |
| Cal | 10-3 | | N.O.[a] | N.O.[b] | + | + | + | 3 | |
| Eva | 8-4 | | N.O.[a] | N.O.[b] | + | + | + | 3 | |
| Gay | 6-2 | | N.O.[a] | N.O.[b] | + | + | + | 3 | |
| Liz | 2-1 | | - | + | - | + | + | 3 | |
| Dot | 9-9 | | N.O.[a] | N.O.[b] | - | + | + | 2 | |
| Iva | 5-6 | | N.O.[a] | N.O.[b] | N.O.[a] | + | + | 2 | |
| **FIELD TRIAL DATA** | | | | | | | | | |
| No. Passing Item | | | 2 | 5 | 8 | 12 | 12 | | |
| No. Failing Item | | | 1 | 0 | 3 | 0 | 0 | | |
| Index of Consistency: Index not computed; limited opportunity for observation | | | | | | | | | |
| **JURY RATINGS** | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 2.80 | 1.60 | 4.08 | 4.75 | 1.40 | | |
| Variability (Q Values) | | | .50 | .50 | .37 | .94 | .85 | | |
| Median Significance Ratings | | | 2.80 | 3.00 | 3.00 | 3.00 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .73** |
| Ch.Dev.Specialists | | | | | | | | | 1.00** |
| O. & M. Specialists | | | | | | | | | .93** |
| Teachers of the Blind | | | | | | | | | .73* |

[a] Environment did not provide opportunity to observe

[b] Home environment necessary

## TABLE V (continued)

USING MULTIPLE AUDITORY CUES 1d

1 Selects and uses dominant cue with verbal assistance

2 Selects and uses dominant cue independently

3 Uses multiple cues if called to his attention

4 Uses multiple cues independently

| PUPILS | C.A. | Ref.No.: | 4 | 2 | 3 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | 4 | |
| Bob | 11-10 | | + | + | + | + | 4 | |
| Fred | 7- 7 | | + | + | + | + | 4 | |
| Hal | 6- 2 | | + | + | + | + | 4 | |
| Cal | 10- 3 | | - | + | + | + | 3 | |
| Iva | 5- 6 | | - | - | + | + | 2 | |
| Dot | 9- 9 | | - | + | - | + | 2 | |
| Gay | 6- 2 | | - | - | + | + | 2 | |
| Eva | 8- 4 | | - | - | - | + | 1 | |
| Jan | 4- 3 | | - | - | - | + | 1 | |
| Ken | 3- 1 | | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 4 | 6 | 7 | 10 | | |
| No. Failing Item | | | 8 | 6 | 5 | 2 | | |
| Index of Consistency | | | | | | | | .83 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.93 | 2.00 | 1.93 | 1.06 | | |
| Variability (Q Values) | | | .28 | .32 | .28 | .28 | | |
| Median Significance Ratings | | | 2.92 | 2.92 | 2.80 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .81** |
| Ch.Dev.Specialists | | | | | | | | 1.00** |
| O. & M. Specialists | | | | | | | | .60 |
| Teachers of the Blind | | | | | | | | .87* |

## TABLE V (continued)

EXPLORING 2a

1 Explores objects within his brachial space

2 Shows initiative to explore through locomotion

3 Explores environment purposefully

4 Asks questions about environment

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | | + | + | + | + | 4 | |
| Cal | 10- 3 | | + | + | + | + | 4 | |
| Eva | 8- 4 | | + | + | + | + | 4 | |
| Gay | 6- 2 | | + | + | + | + | 4 | |
| Hal | 6- 2 | | + | + | + | + | 4 | |
| Jan | 4- 3 | | + | + | + | + | 4 | |
| Ann | 12- 9 | | + | + | - | + | 3 | |
| Dot | 9- 9 | | - | + | + | + | 3 | |
| Fred | 7- 7 | | - | + | + | + | 3 | |
| Iva | 5- 6 | | - | + | + | + | 3 | |
| Ken | 3- 1 | | - | + | + | + | 3 | |
| Liz | 2- 1 | | - | - | + | + | 2 | |
| **FIELD TRIAL DATA** | | | | | | | | |
| No. Passing Item | | | 7 | 11 | 11 | 12 | | |
| No. Failing Item | | | 5 | 1 | 1 | 0 | | |
| Index of Consistency: Index not computed because of limited number of failures | | | | | | | | |
| **JURY RATINGS** | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.67 | 3.08 | 2.06 | 1.00 | | |
| Variability (Q Values) | | | .44 | .38 | .33 | .00 | | |
| Median Significance Ratings | | | 2.90 | 3.00 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .79** |
| Ch.Dev.Specialists | | | | | | | | .60 |
| O. & M. Specialists | | | | | | | | .87* |
| Teachers of the Blind | | | | | | | | .87* |

## TABLE V (continued)

WALKING 2b

1 Stands upright without support

2 Walks holding to person

3 Walks about holding to objects

4 Walks with cross pattern

5 Walks with weight properly distributed

6 Points toes in direction of travel

7 Walks with relaxed gait

| PUPILS | C.A. | Ref.No.: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | | + | - | + | + | + | + | + | 6 | |
| Iva | 5- 6 | | - | + | + | + | + | + | + | 6 | |
| Eva | 8- 4 | | - | + | + | + | + | + | + | 6 | |
| Fred | 7- 7 | | - | + | + | + | + | + | + | 6 | |
| Hal | 6- 2 | | - | + | + | + | + | + | + | 6 | |
| Ann | 12- 9 | | - | - | + | + | + | + | + | 5 | |
| Gay | 6- 2 | | - | + | - | + | + | + | + | 5 | |
| Jan | 4- 3 | | - | - | + | + | + | + | + | 5 | |
| Cal | 10- 3 | | - | - | - | + | + | + | + | 4 | |
| Dot | 9- 9 | | - | - | - | + | + | + | + | 4 | |
| Ken | 3- 1 | | - | - | - | - | + | + | + | 3 | |
| Liz | 2- 1 | | - | - | - | - | + | + | + | 3 | |
| FIELD TRIAL DATA | | | | | | | | | | | |
| No. Passing Item | | | 1 | 5 | 7 | 10 | 12 | 12 | 12 | | |
| No. Failing Item | | | 11 | 7 | 5 | 2 | 0 | 0 | 0 | | |
| Index of Consistency | | | | | | | | | | | .50 |
| JURY RATINGS | | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | | |
| Median Ratings | | | 6.94 | 4.13 | 5.60 | 5.00 | 1.67 | 2.80 | 1.40 | | |
| Variability (Q Values) | | | .29 | .66 | .50 | .75 | .68 | .50 | .90 | | |
| Median Significance Ratings | | | 2.92 | 2.63 | 3.00 | 2.86 | 2.92 | 3.00 | 2.90 | | |
| Average Inter-judge Correlations | | | | | | | | | | | |
| All Jurors | | | | | | | | | | | .79** |
| Ch.Dev.Specialists | | | | | | | | | | | .84** |
| O. & M. Specialists | | | | | | | | | | | .79** |
| Teachers of the Blind | | | | | | | | | | | .79** |

## TABLE V (continued)

RUNNING 2c

1 Runs with support from each side

2 Runs with one hand held

3 Runs with slight contact of sighted person

4 Runs along side another person, using auditory cue

5 Runs toward another person using auditory cue as direction taker

6 Runs freely and willingly

| PUPILS | C.A. | Ref.No.: 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Fred | 7- 7 | + | + | + | + | + | + | 6 | |
| Ann | 12- 9 | - | + | + | + | + | + | 5 | |
| Bob | 11-10 | - | + | + | + | + | + | 5 | |
| Cal | 10- 3 | - | + | + | + | + | + | 5 | |
| Dot | 9- 9 | - | + | + | + | + | + | 5 | |
| Eva | 8- 4 | - | + | + | + | + | + | 5 | |
| Hal | 6- 2 | - | + | + | + | + | + | 5 | |
| Iva | 5- 6 | - | + | + | + | + | + | 5 | |
| Jan | 4- 3 | - | + | + | + | + | + | 5 | |
| Gay | 6- 2 | - | - | - | - | + | + | 2 | |
| Ken | 3- 1 | - | - | - | - | - | - | 0 | |
| Liz | 2- 1 | - | - | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | 1 | 9 | 9 | 9 | 10 | 10 | | |
| No. Failing Item | | 11 | 3 | 3 | 3 | 2 | 2 | | |
| Index of Consistency | | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | 5.83 | 4.90 | 4.17 | 3.00 | 1.93 | 1.07 | | |
| Variability (Q Values) | | .34 | .40 | .34 | 0.00 | .29 | .29 | | |
| Median Significance Ratings | | 3.00 | 3.00 | 2.92 | 2.33 | 2.80 | 2.[illegible]3 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .92** |
| Ch.Dev.Specialists | | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | | .93** |
| Teachers of the Blind | | | | | | | | | .85** |

## TABLE V (continued)

**JUMPING 2d**

1 Jumps with assistance
2 Jumps off step
3 Jumps--both feet off ground
4 Jumps off low wall with assistance
5 Jumps off low wall
6 Jumps, coordinating other body movements

| PUPILS | C.A. | Ref.No.: | 6 | 5 | 4 | 2 | 3 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | + | + | 6 | |
| Bob | 11-10 | | + | + | + | + | + | + | 6 | |
| Cal | 10- 3 | | + | + | + | + | + | + | 6 | |
| Dot | 9- 9 | | + | + | + | + | + | + | 6 | |
| Eva | 8- 4 | | + | + | + | + | + | + | 6 | |
| Iva | 5- 6 | | + | + | + | + | + | + | 6 | |
| Fred | 7- 7 | | - | + | + | + | + | + | 5 | |
| Gay | 6- 2 | | - | + | + | + | + | + | 5 | |
| Hal | 6- 2 | | - | + | + | + | + | + | 5 | |
| Jan | 4- 3 | | - | N.O.[a] | N.O.[a] | + | + | + | 3 | |
| Ken | 3- 1 | | - | N.O.[a] | N.O.[a] | - | + | + | 2 | |
| Liz | 2- 1 | | - | - | - | - | + | + | 2 | |
| FIELD TRIAL DATA | | | | | | | | | | |
| No. Passing Item | | | 6 | 9 | 9 | 10 | 12 | 12 | | |
| No. Failing Item | | | 6 | 1 | 1 | 2 | 0 | 0 | | |
| Index of Consistency | | | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | |
| Median Ratings | | | 5.92 | 5.00 | 3.92 | 3.00 | 2.25 | 1.00 | | |
| Variability (Q Values) | | | .32 | .32 | .46 | .45 | .51 | 0.00 | | |
| Median Significance Ratings | | | 2.63 | 2.80 | 2.92 | 2.92 | 2.80 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | | |
| All Jurors | | | | | | | | | | .75** |
| Ch.Dev.Specialists | | | | | | | | | | .96** |
| O. & M. Specialists | | | | | | | | | | .85** |
| Teachers of the Blind | | | | | | | | | | .46 |

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[a] No wall available

TABLE V (continued)

USING DIFFERENCES IN TEXTURES OF TERRAIN 3a

1 Identifies gross terrain differences during instruction

2 Uses gross terrain differences during instruction

3 Reports and uses gross terrain differences by himself

4 Adapts with minimum instruction when some familiar landmark is altered

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | N.V.[a] | + | + | + | 3 | |
| Bob | 11-10 | | N.V.[a] | + | + | + | 3 | |
| Eva | 8- 4 | | N.V.[a] | + | + | + | 3 | |
| Fred | 7- 7 | | N.V.[a] | + | + | + | 3 | |
| Hal | 6- 2 | | N.V.[a] | + | + | + | 3 | |
| Jan | 4- 3 | | N.V.[a] | + | + | + | 3 | |
| Cal | 10- 3 | | N.V.[a] | - | + | + | 2 | |
| Dot | 9- 9 | | N.V.[a] | - | + | + | 2 | |
| Gay | 6- 2 | | N.V.[a] | - | + | + | 2 | |
| Iva | 5- 6 | | N.V.[a] | - | + | + | 2 | |
| Ken | 3- 1 | | N.V.[a] | - | - | - | 0 | |
| Liz | 2- 1 | | N.V.[a] | - | - | - | 0 | |
| **FIELD TRIAL DATA** | | | | | | | | |
| No. Passing Item | | | | 6 | 10 | 10 | | |
| No. Failing Item | | | | 6 | 2 | 2 | | |
| Index of Consistency: Index not computed; inadequate opportunity to observe | | | | | | | | |
| **JURY RATINGS** | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.50 | 3.50 | 1.83 | 1.17 | | |
| Variability (Q Values) | | | .50 | .50 | .34 | .34 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .79** |
| Ch.Dev.Specialists | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | .73* |
| Teachers of the Blind | | | | | | | | .73* |

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[a] Could not be observed within the time allotted for testing

## TABLE V (continued)

USING TACTUAL CUES 3b

1 Explores with mouth

2 Uses hands to distinguish differences

3 Uses feet to distinguish surface differences

4 Makes discriminations between grossly different surfaces and/or textures

5 Makes fine discriminations between objects of similar textures

| PUPILS | C.A. | Ref.No.: | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | + | 5 | |
| Eva | 8- 4 | | + | + | + | + | + | 5 | |
| Bob | 11-10 | | - | + | + | + | + | 4 | |
| Cal | 10- 3 | | + | + | - | + | + | 4 | |
| Dot | 9- 9 | | - | + | + | + | + | 4 | |
| Fred | 7- 7 | | - | + | + | + | + | 4 | |
| Hal | 6- 2 | | - | + | + | + | + | 4 | |
| Iva | 5- 6 | | - | + | + | + | + | 4 | |
| Jan | 4- 3 | | - | + | + | + | + | 4 | |
| Gay | 6- 2 | | - | - | + | + | + | 3 | |
| Ken | 3- 1 | | - | - | - | + | + | 2 | |
| Liz | 2- 1 | | - | - | - | + | + | 2 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | 3 | 9 | 9 | 12 | 12 | | |
| No. Failing Item | | | 9 | 3 | 3 | 0 | 0 | | |
| Index of Consistency | | | | | | | | | .60 |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 4.83 | 3.83 | 3.10 | 2.00 | 1.14 | | |
| Variability (Q Values) | | | .34 | .34 | .40 | .34 | .29 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 3.00 | 3.00 | 2.80 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .70** |
| Ch.Dev.Specialists | | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | | .73* |
| Teachers of the Blind | | | | | | | | | .76** |

## TABLE V (continued)

USING TEMPERATURE CUES 3c

1 Shows recognition of gross differences in temperatures[#]

2 Uses temperature cues to identify objects

3 Uses temperature as information point when appropriate

4 Reports accurately objects along hot-cold continuum[#]

| PUPILS | C.A. | Ref.No.: 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|
| Bob | 11-10 | + | + | + | + | 4 | |
| Dot | 9- 9 | + | + | + | + | 4 | |
| Fred | 7- 7 | + | + | + | + | 4 | |
| Gay | 6- 2 | + | + | + | + | 4 | |
| Hal | 6- 2 | + | + | + | + | 4 | |
| Ann | 12- 9 | + | - | + | + | 3 | |
| Eva | 8- 4 | - | + | + | + | 3 | |
| Cal | 10- 3 | - | - | + | + | 2 | |
| Jan | 4- 3 | - | - | + | + | 2 | |
| Iva | 5- 6 | - | - | - | + | 1 | |
| Ken | 3- 1 | - | - | - | - | 0 | |
| Liz | 2- 1 | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | |
| No. Passing Item | | 6 | 6 | 9 | 10 | | |
| No. Failing Item | | 6 | 6 | 3 | 2 | | |
| Index of Consistency | | | | | | | .85 |
| JURY RATINGS | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | | 3.75 | 2.67 | 2.25 | 1.40 | | |
| Variability (Q Values) | | .94 | .75 | .92 | .90 | | |
| Median Significance Ratings | | 2.92 | 3.00 | 3.00 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .17 |
| Ch.Dev.Specialists | | | | | | | .46 |
| O. & M. Specialists | | | | | | | -.20 |
| Teachers of the Blind | | | | | | | -.07 |

TABLE V (continued)

USING OLFACTORY CUES 3d

1 Uses smell as part of learning

2 Shows recognition of common odors through verbalization

3 Comments on distinctive odors

4 Uses odor as an information point and/or landmark

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | | | | | | |
| No. Failing Item | | | | | | | | |
| Index of Consistency | | | | | | | | |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.60 | 2.67 | 2.67 | 1.14 | | |
| Variability (Q Values) | | | .57 | .76 | .76 | .32 | | |
| Median Significance Ratings | | | 3.00 | 2.80 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .46** |
| Ch.Dev.Specialists | | | | | | | | .60 |
| O. & M. Specialists | | | | | | | | .67 |
| Teachers of the Blind | | | | | | | | .46 |

## TABLE V (continued)

USING ROUTES ON VERBAL INSTRUCTION 4a

1 Travels straight line route and reverses it
2 Travels route with one turn
3 Reverses above route
4 Travels route involving a combination of one right and one left turn[#]
5 Reverses above route
6 Travels route requiring turns and following curved lines
7 Reverses above route

| PUPILS | C.A. | Ref.No.: 7 | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | + | + | + | + | + | + | + | 7 | |
| Cal | 10- 3 | N.O.[a] | N.O.[a] | + | + | + | + | + | 5 | |
| Fred | 7- 7 | N.O.[a] | N.O.[a] | + | + | + | + | + | 5 | |
| Bob | 11-10 | N.O.[a] | N.O.[a] | - | + | + | + | + | 4 | |
| Iva | 5- 6 | - | - | - | + | + | + | + | 4 | |
| Jan | 4- 3 | - | - | - | + | + | + | + | 4 | |
| Dot | 9- 9 | - | - | - | - | + | + | + | 3 | |
| Eva | 8- 4 | - | - | - | - | + | + | + | 3 | |
| Gay | 6- 2 | - | - | - | - | + | + | + | 3 | |
| Hal | 6- 2 | - | - | - | - | + | + | + | 3 | |
| Ken | 3- 1 | - | - | - | - | - | - | - | 0 | |
| Liz | 2- 1 | - | - | - | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | | | |
| No. Passing Item | | 1 | 1 | 3 | 6 | 10 | 10 | 10 | | |
| No. Failing Item | | 8 | 8 | 9 | 6 | 2 | 2 | 2 | | |
| Index of Consistency | | | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | |
| Median Ratings | | 7.00 | 5.94 | 5.00 | 4.06 | 2.25 | 2.60 | 1.14 | | |
| Variability (Q Values) | | .00 | .28 | .00 | .28 | .44 | .57 | .32 | | |
| Median Significance Ratings | | | | | | | | | | |
| Average Inter-judge Correlations | | | | | | | | | | |
| All Jurors | | | | | | | | | | .93** |
| Ch.Dev.Specialists | | | | | | | | | | .84** |
| O. & M. Specialists | | | | | | | | | | .94** |
| Teachers of the Blind | | | | | | | | | | .97** |

[a] No route involving curves could be assigned

## TABLE V (continued)

TRAVELING ABOUT THE SCHOOL 4c

1 Requires sighted adult guide

2 Requires sighted peer guide

3 Travels with sighted group

4 Travels familiar route alone

5 Uses more than one discrete route between the same two points

6 Follows in line of peers without needing physical contact

7 Understands inter-relationships of major routes around school

| PUPILS | C.A. | Ref.No.: 7 | 6 | 5 | 3 | 4 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | + | N.O.[a] | + | + | + | + | + | 6 | |
| Fred | 7- 7 | + | N.O.[a] | + | + | + | + | + | 6 | |
| Ann | 12- 9 | + | N.O.[a] | + | - | + | + | + | 5 | |
| Cal | 10- 3 | - | N.O.[a] | + | + | + | + | + | 5 | |
| Hal | 6- 2 | - | N.O.[a] | + | + | + | + | + | 5 | |
| Dot | 9- 9 | - | N.O.[a] | - | + | + | + | + | 4 | |
| Eva | 8- 4 | - | N.O.[a] | - | + | + | + | + | 4 | |
| Gay | 6- 2 | - | N.O.[a] | - | + | + | + | + | 4 | |
| Iva | 5- 6 | - | N.O.[a] | - | - | N.O.[a] | + | + | 2 | |
| Jan[b] | 4- 3 | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | 0 | |
| Ken[b] | 3- 1 | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | 0 | |
| Liz[b] | 2- 1 | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | 0 | |
| FIELD TRIAL DATA | | | | | | | | | | |
| No. Passing Item | | 3 | 0 | 5 | 7 | 8 | 8 | 8 | | |
| No. Failing Item | | 5 | 0 | 3 | 1 | 0 | 0 | 0 | | |
| Index of Consistency | | | | | | | | | | .50 |
| JURY RATINGS | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | |
| Median Ratings | | 6.75 | 4.00 | 6.08 | 3.08 | 5.08 | 2.07 | 1.00 | | |
| Variability (Q Values) | | .50 | .32 | .37 | .38 | .38 | .28 | .00 | | |
| Median Significance Ratings | | 2.92 | 3.00 | 2.92 | 2.80 | 3.00 | 2.80 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | | |
| All Jurors | | | | | | | | | | .90** |
| Ch.Dev.Specialists | | | | | | | | | | .91** |
| O. & M. Specialists | | | | | | | | | | .91** |
| Teachers of the Blind | | | | | | | | | | .91** |

[a] Child's travel with groups could not be observed

[b] Sub-scale not appropriate for preschool children

## TABLE V (continued)

RECALLING LANDMARK PATTERNS 5a

1 Refers to landmarks on familiar route in manner meaningful to himself

2 Follows a short new route and recalls one significant landmark

3 Recalls sequence of landmarks he will encounter in reversing a route he has just completed

| PUPILS | C.A. | Ref.No.: | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | |
| FIELD TRIAL DATA | | | | | | | |
| No. Passing Item | | | | | | | |
| No. Failing Item | | | | | | | |
| Index of Consistency | | | | | | | |
| JURY RATINGS | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | | | 2.60 | 1.87 | 1.25 | | |
| Variability (Q Values) | | | .49 | .60 | .69 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .17 |
| Ch.Dev.Specialists | | | | | | | .67 |
| O. & M. Specialists | | | | | | | .67 |
| Teachers of the Blind | | | | | | | .00 |

## TABLE V (continued)

USING TRAILING TECHNIQUES 5b

1 Uses any method to detect objects in his path[#]

2 Uses appropriate hand to trail

3 Uses hand and fingers in approved manner

4 Trails efficiently, discovering and avoiding hazards

5 Substitutes other techniques in appropriate situations

| PUPILS | C.A. | Ref.No.: 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | N.V.[a] | - | - | + | + | 2 | |
| Bob | 11-10 | N.V.[a] | - | - | + | + | 2 | |
| Cal | 10- 3 | N.V.[a] | - | - | + | + | 2 | |
| Dot | 9- 9 | N.V.[a] | - | - | + | + | 2 | |
| Fred | 7- 7 | N.V.[a] | - | - | + | + | 2 | |
| Gay | 6- 2 | N.V.[a] | - | - | + | + | 2 | |
| Hal | 6- 2 | N.V.[a] | - | - | + | + | 2 | |
| Iva | 5- 6 | N.V.[a] | - | - | + | + | 2 | |
| Eva | 8- 4 | N.V.[a] | - | - | - | + | 1 | |
| Jan | 4- 3 | N.V.[a] | - | - | - | + | 1 | |
| Ken | 3- 1 | N.V.[a] | - | - | - | + | 1 | |
| Liz | 2- 1 | N.V.[a] | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 0 | 0 | 8 | 11 | | |
| No. Failing Item | | | 12 | 12 | 4 | 1 | | |
| Index of Consistency; not computed because of small number of successes | | | | | | | | |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | 5.00 | 3.63 | 3.00 | 2.00 | 1.00 | | |
| Variability (Q Values) | | .32 | .62 | .75 | .45 | .33 | | |
| Median Significance Ratings | | 3.00 | 2.92 | 2.92 | 3.00 | 2.63 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .62** |
| Ch.Dev.Specialists | | | | | | | | -.04 |
| O. & M. Specialists | | | | | | | | .54 |
| Teachers of the Blind | | | | | | | | .94** |

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[a] Could not be sure which variables were operating

## TABLE V (continued)

USING DIFFERENCES IN ELEVATION 5d

1 Verbalizes about definite changes in elevation

2 Verbalizes an awareness of gradual slopes

3 Uses elevation as cue and/or landmark

| PUPILS | C.A. | Ref.No.: | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | |
| FIELD TRIAL DATA | | | | | | | |
| No. Passing Item | | | | | | | |
| No. Failing Item | | | | | | | |
| Index of Consistency | | | | | | | |
| JURY RATINGS | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | | | 2.25 | 2.00 | 1.75 | | |
| Variability (Q Values) | | | .85 | .45 | .85 | | |
| Median Significance Ratings | | | 2.92 | 2.80 | 2.80 | | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | -.11 |
| Ch.Dev.Specialists | | | | | | | .67 |
| O. & M. Specialists | | | | | | | .00 |
| Teachers of the Blind | | | | | | | .16 |

## TABLE V (continued)

USING CARDINAL DIRECTIONS 6b

1 Knows the direction a familiar building faces

2 (Omitted before field trial)

3 Points out cardinal directions in a familiar setting

4 Points out geographic locations on a relief map in terms of cardinal directions

5 Travels a route with one turn described in terms of cardinal directions#

6 Knows location of other geographic areas in relation to his own

| PUPILS | C.A. | Ref.No.: | 4 | 6 | 5 | 3 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | | N.O.[a] | + | + | + | + | 4 | |
| Fred | 7- 7 | | - | + | + | + | + | 4 | |
| Ann | 12- 9 | | - | - | - | - | - | 0 | |
| Cal | 10- 3 | | - | - | - | - | - | 0 | |
| Dot | 9- 9 | | - | - | - | - | - | 0 | |
| Eva | 8- 4 | | - | - | - | - | - | 0 | |
| Gay | 6- 2 | | - | - | - | - | - | 0 | |
| Hal | 6- 2 | | - | - | - | - | - | 0 | |
| Iva | 5- 6 | | - | - | - | - | - | 0 | |
| Jan | 4- 3 | | - | - | - | - | - | 0 | |
| Ken | 3- 1 | | - | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | 0 | 2 | 2 | 2 | 2 | | |
| No. Failing Item | | | 11 | 10 | 10 | 10 | 10 | | |
| Index of Consistency ;not computed because of small number of successes | | | | | | | | | |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 3.80 | 4.60 | 4.00 | 1.40 | 1.92 | | |
| Variability (Q Values) | | | 1.25 | .71 | 1.16 | .97 | .38 | | |
| Median Significance Ratings | | | 2.92 | 2.80 | 2.92 | 2.92 | 2.80 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .46** |
| Ch.Dev.Specialists | | | | | | | | | .73** |
| O. & M. Specialists | | | | | | | | | -.02 |
| Teachers of the Blind | | | | | | | | | .63* |

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[a] No relief map available

TABLE V (continued)

USING RIGHT AND LEFT 6c

1 Distinguishes right and left on own body

2 Responds correctly to a command to turn right or turn left

3 Uses right and left consistently as an aid to travel

4 Distinguishes right and left in the environment

| PUPILS | C.A. | Ref. No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | 4 | |
| Bob | 11-10 | | + | + | + | + | 4 | |
| Fred | 7- 7 | | + | + | + | + | 4 | |
| Cal | 10- 3 | | - | + | + | + | 3 | |
| Eva | 8- 4 | | - | + | + | + | 3 | |
| Jan | 4- 3 | | - | + | + | + | 3 | |
| Dot | 9- 9 | | - | - | + | + | 2 | |
| Iva | 5- 6 | | - | - | + | + | 2 | |
| Gay | 6- 2 | | - | - | - | + | 1 | |
| Hal | 6- 2 | | - | - | - | + | 1 | |
| Ken | 3- 1 | | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 3 | 6 | 8 | 10 | | |
| No. Failing Item | | | 9 | 6 | 4 | 2 | | |
| Index of Consistency | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.00 | 3.40 | 2.40 | 1.00 | | |
| Variability (Q Values) | | | .94 | .45 | .57 | .00 | | |
| Median Significance Ratings | | | 3.00 | 2.90 | 2.90 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .64** |
| Ch.Dev.Specialists | | | | | | | | .46 |
| O. & M. Specialists | | | | | | | | .60 |
| Teachers of the Blind | | | | | | | | .60 |

## TABLE V (continued)

USING STREET PATTERNS 6d

1 Knows street address of his own home

2 Reports to sighted guide location of his home in relation to others on the block

3 Locates his home when approaching from either direction

4 Correctly names streets near his home

5 Directs driver to his home from a familiar location in the neighborhood

6 Knows numbering system on his street and on adjoining blocks

| PUPILS | C.A. | Ref.No.: | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | - | + | + | + | + | + | 5 | |
| Fred | 7- 7 | | - | + | + | + | + | + | 5 | |
| Hal | 7- 2 | | - | - | + | + | + | + | 4 | |
| Bob | 11-10 | | - | - | - | + | + | + | 3 | |
| Cal | 10- 3 | | - | - | - | + | + | + | 3 | |
| Gay | 6- 2 | | - | - | + | - | + | + | 3 | |
| Dot | 9- 9 | | - | - | + | - | - | + | 2 | |
| Eva | 8- 4 | | + | - | - | - | - | + | 2 | |
| Jan | 4- 3 | | - | - | - | - | - | + | 1 | |
| Iva | 5- 6 | | - | - | - | - | - | - | 0 | |
| Ken | 3- 1 | | - | - | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | - | - | 0 | |

| | 6 | 5 | 4 | 3 | 2 | 1 | INDEX |
|---|---|---|---|---|---|---|---|
| FIELD TRIAL DATA | | | | | | | |
| No. Passing Item | 1 | 2 | 5 | 5 | 6 | 9 | |
| No. Failing Item | 11 | 10 | 7 | 7 | 6 | 3 | |
| Index of Consistency | | | | | | | .80 |
| JURY RATINGS | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | 5.78 | 4.92 | 3.00 | 3.00 | 3.63 | 1.06 | |
| Variability (Q Values) | 1.19 | .38 | 1.01 | 1.56 | .82 | .14 | |
| Median Significance Ratings | 2.92 | 2.92 | 3.00 | 3.00 | 2.92 | 3.00 | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .47** |
| Ch.Dev.Specialists | | | | | | | .58* |
| O. & M. Specialists | | | | | | | .52* |
| Teachers of the Blind | | | | | | | .09 |

TABLE V (continued)

COUNTING FOR ORIENTATION 7a

1 Counts by ones to five

2 Uses counting to establish position

3 Counts by 5's, 10's to 100

4 Understands ordinal numbers to 5th

5 Demonstrates knowledge of equivalent values of coins

| PUPILS | C.A. | Ref. No.: | 5 | 3 | 2 | 4 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | + | 5 | |
| Bob | 11-10 | | + | + | + | + | + | 5 | |
| Fred | 7- 7 | | + | + | + | + | + | 5 | |
| Dot | 9- 9 | | - | + | + | + | + | 4 | |
| Hal | 6- 2 | | - | + | + | + | + | 4 | |
| Cal | 10- 3 | | - | - | + | + | + | 3 | |
| Eva | 8- 4 | | - | + | - | + | + | 3 | |
| Gay | 6- 2 | | - | - | + | + | + | 3 | |
| Iva | 5- 6 | | - | - | - | - | + | 1 | |
| Jan | 4- 3 | | - | - | - | - | + | 1 | |
| Ken | 3- 1 | | - | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | 3 | 6 | 6 | 8 | 10 | | |
| No. Failing Item | | | 9 | 6 | 5 | 4 | 2 | | |
| Index of Consistency | | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 4.85 | 3.75 | 2.40 | 3.00 | 1.00 | | |
| Variability (Q Values) | | | .32 | .69 | .71 | .45 | .00 | | |
| Median Significance Ratings | | | 2.25 | 2.63 | 2.92 | 2.92 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .66** |
| Ch.Dev.Specialists | | | | | | | | | .81** |
| O. & M. Specialists | | | | | | | | | .93** |
| Teachers of the Blind | | | | | | | | | .40 |

TABLE V (continued)

USING AUDITORY CUES--TRAVEL 7b

1-2 Differentiates between common sounds[a]

3 Identifies objects as sound sources during travel

4 Locates object which casts a sound shadow

5 Locates object which produces an echo

| PUPILS | C.A. | Ref.No. | 4 | 5 | 3 | 1-2 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | 4 | |
| Bob | 11-10 | | - | + | + | + | 3 | |
| Dot | 9- 9 | | - | + | + | + | 3 | |
| Fred | 7- 7 | | - | + | + | + | 3 | |
| Gay | 6- 2 | | - | + | + | + | 3 | |
| Hal | 6- 2 | | - | + | + | + | 3 | |
| Iva | 5- 6 | | - | + | + | + | 3 | |
| Cal | 10- 3 | | - | - | + | + | 2 | |
| Eva | 8- 4 | | - | - | + | + | 2 | |
| Jan | 4- 3 | | - | - | - | + | 1 | |
| Ken | 3- 1 | | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 1 | 7 | 9 | 10 | | |
| No. Failing Item | | | 11 | 5 | 3 | 2 | | |
| Index of Consistency | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 5.08 | 4.10 | 3.50 | 1.50 | | |
| Variability (Q Values) | | | .25 | .23 | .59 | .75 | | |
| Median Significance Ratings | | | 2.80 | 2.92 | 2.92 | 2.86 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .86** |
| Ch.Dev.Specialists | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | .93** |
| Teachers of the Blind | | | | | | | | .73* |

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[a] Items 1 and 2 in jury edition were replaced by this more generalized behavior

## TABLE V (continued)

USING SIGHTED GUIDE 7c

1 Holds hand of sighted adult guide
2 Grasps sighted guide's arm
3 Walks with guide under normal conditions
4 Uses positional cues and movement of sighted guide in crowded areas and on steps
5 Assists in opening and closing doors
6 Maintains own alertness and orientation
7 Directs sighted guide when necessary
8 Instructs companions in sighted guide techniques

| PUPILS | C.A. | Ref.No.: | 8 | 5 | 4 | 2 | 7 | 3 | 6 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | - | - | + | - | + | + | + | + | 5 | |
| Bob | 11-10 | | - | - | - | + | - | + | + | + | 4 | |
| Fred | 7- 7 | | - | - | - | - | + | - | + | + | 3 | |
| Cal | 10- 3 | | - | - | - | - | - | - | + | + | 2 | |
| Dot | 9- 9 | | - | - | - | - | - | - | - | + | 1 | |
| Eva | 8- 4 | | - | - | - | - | - | - | - | + | 1 | |
| Gay | 6- 2 | | - | - | - | - | - | - | - | + | 1 | |
| Hal | 6- 2 | | - | - | - | - | - | - | - | + | 1 | |
| Iva | 5- 6 | | - | - | - | - | - | - | - | + | 1 | |
| Jan | 4- 3 | | - | - | - | - | - | - | - | + | 1 | |
| Ken | 3- 1 | | - | - | - | - | - | - | - | + | 1 | |
| Liz | 2- 1 | | - | - | - | - | - | - | - | + | 1 | |

| FIELD TRIAL DATA | 8 | 5 | 4 | 2 | 7 | 3 | 6 | 1 | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| No. Passing Item | 0 | 0 | 1 | 1 | 2 | 2 | 4 | 12 | |
| No. Failing Item | 12 | 12 | 11 | 11 | 10 | 10 | 8 | 0 | |
| Index of Consistency;not computed due to small number of successes | | | | | | | | | |
| **JURY RATINGS** | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | 6.00 | 5.75 | 4.13 | 2.00 | 7.63 | 3.08 | 6.63 | 1.00 | |
| Variability (Q Values) | 1.38 | 1.38 | .44 | 0.00 | .84 | .30 | .84 | .00 | |
| Median Significance Ratings | 2.92 | 2.92 | 2.92 | 2.92 | 2.92 | 2.92 | 3.00 | 2.80 | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .81** |
| Ch.Dev.Specialists | | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | | .96** |
| Teachers of the Blind | | | | | | | | | .79* |

### TABLE V (continued)

USING HAND AND FOREARM TECHNIQUE 8a

1 Holds forearm in recommended position

2 Employs fingers and palm as additional aid

3 Employs opposite arm to locate low objects

4 Shows independence from techniques when appropriate

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | | | | | | |
| No. Failing Item | | | | | | | | |
| Index of Consistency | | | | | | | | |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 4.00 | 2.75 | 1.50 | 1.83 | | |
| Variability (Q Values) | | | .00 | .57 | .63 | .54 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .62** |
| Ch.Dev.Specialists | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | .46 |
| Teachers of the Blind | | | | | | | | .60 |

TABLE V (continued)

USING SEARCH PATTERN 8b

1 Uses auditory cues, when possible, to pinpoint location of dropped object

2 Uses protective technique in stooping toward object

3 Starts at point and sweeps a widening circle with dominant hand

4 Sweeps a square pattern

| PUPILS | C.A. | Ref. No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | - | - | + | + | 2 | |
| Bob | 11-10 | | - | - | - | + | 1 | |
| Cal | 10- 3 | | - | - | - | + | 1 | |
| Eva | 8- 4 | | - | - | - | + | 1 | |
| Fred | 7- 7 | | - | - | - | + | 1 | |
| Gay | 6- 2 | | - | - | - | + | 1 | |
| Hal | 6- 2 | | - | - | - | + | 1 | |
| Iva | 5- 6 | | - | - | - | + | 1 | |
| Dot | 9- 9 | | - | - | - | - | 0 | |
| Jan | 4- 3 | | - | - | - | - | 0 | |
| Ken | 3- 1 | | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 0 | 0 | 1 | 8 | | |
| No. Failing Item | | | 12 | 12 | 11 | 4 | | |
| Index of Consistency; Index not computed; small number of successes | | | | | | | | |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.63 | 3.20 | 1.63 | 1.37 | | |
| Variability (Q Values) | | | .84 | .39 | .49 | .92 | | |
| Median Significance Ratings | | | 2.80 | 2.92 | 2.92 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .42** |
| Ch.Dev.Specialists | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | .73* |
| Teachers of the Blind | | | | | | | | .33 |

TABLE V (continued)

USING DIRECTION TAKING 8c

1 Aligns body squarely with a fixed object to establish position in relation to other objects in the environment

2 Determines direction of travel in relation to a fixed object

3 Uses sound sources to establish a course of straight line travel to an object

4 Moves directly toward selected goal upon request$^{\#}$

5 Returns directly to starting point upon request$^{\#}$

| PUPILS | C.A. | Ref. No.: | 1 | 5 | 4 | 2 | 3 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | + | 5 | |
| Bob | 11-10 | | - | + | + | + | + | 4 | |
| Cal | 10- 3 | | - | + | + | + | + | 4 | |
| Gay | 6- 2 | | - | + | + | + | + | 4 | |
| Jan | 4- 3 | | - | + | + | + | + | 4 | |
| Fred | 7- 7 | | - | - | - | + | + | 2 | |
| Hal | 6- 2 | | - | - | - | + | + | 2 | |
| Dot | 9- 9 | | - | - | - | - | + | 1 | |
| Eva | 8- 4 | | - | - | - | - | + | 1 | |
| Iva | 5- 6 | | - | - | - | - | + | 1 | |
| Ken | 3- 1 | | - | - | - | - | - | 0 | |
| Liz | 2- 1 | | - | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | 1 | 5 | 5 | 7 | 10 | | |
| No. Failing Item | | | 11 | 7 | 7 | 5 | 2 | | |
| Index of Consistency | | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 2.17 | 4.50 | 4.00 | 2.83 | 1.50 | | |
| Variability (Q Values) | | | .67 | .75 | .75 | .75 | 1.00 | | |
| Median Significance Ratings | | | 2.90 | 2.90 | 3.00 | 2.90 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .21* |
| Ch.Dev.Specialists | | | | | | | | | -.34 |
| O. & M. Specialists | | | | | | | | | .81** |
| Teachers of the Blind | | | | | | | | | -.30 |

## TABLE V (continued)

ENTERING AND LEAVING AN AUTOMOBILE 9a

1 Enters and leaves with support

2 Discovers for himself which direction car is facing

3 Enters and leaves car independently, using any method

4 Enters and leaves car independently in manner recommended for maximum safety#

| PUPILS | C.A. | Ref.No.: | 4 | 2 | 3 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Fred | 7- 7 | | + | + | + | + | 4 | |
| Hal | 6- 2 | | + | + | + | + | 4 | |
| Ann | 12- 9 | | - | + | + | + | 3 | |
| Dot | 9- 9 | | - | + | + | + | 3 | |
| Jan | 4- 3 | | - | + | + | + | 3 | |
| Eva | 8- 4 | | - | - | + | + | 2 | |
| Ken | 3- 1 | | - | - | - | + | 1 | |
| Bob[a] | 11-10 | | N.O. | N.O. | N.O. | N.O. | | |
| Cal[a] | 10- 3 | | N.O. | N.O. | N.O. | N.O. | | |
| Gay[a] | 6- 2 | | N.O. | N.O. | N.O. | N.O. | | |
| Iva[a] | 5- 6 | | N.O. | N.O. | N.O. | N.O. | | |
| Liz | 2- 1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 2 | 5 | 6 | 7 | | |
| No. Failing Item | | | 6 | 3 | 2 | 1 | | |
| Index of Consistency | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.50 | 2.50 | 2.50 | 1.07 | | |
| Variability (Q Values) | | | .59 | .75 | .84 | .29 | | |
| Median Significance Ratings | | | 2.92 | 2.80 | 2.80 | 2.63 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .41** |
| Ch.Dev.Specialists | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | .18 |
| Teachers of the Blind | | | | | | | | .40 |

[a] When this child was observed, no automobile was available for testing

## TABLE V (continued)

USING THE SCHOOL BUS 9b

1 Reaches bus, enters and leaves bus with assistance

2a Mounts steps independently[d]

2b Finds seat independently[d]

3 Leaves bus independently

4 Reaches bus stop at school without assistance

5 Reaches neighborhood bus stop without assistance

| PUPILS | C.A. | Ref.No.: | 5 | 4 | 3 | 2b | 2a | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | | N.O.[a] | - | + | + | + | + | 4 | |
| Eva | 8- 4 | | N.O.[a] | - | + | + | + | + | 4 | |
| Cal | 10- 3 | | N.O.[a] | - | - | + | + | + | 3 | |
| Gay | 6- 2 | | N.O.[a] | - | - | + | + | + | 3 | |
| Iva | 5- 6 | | N.O.[a] | - | - | - | + | + | 2 | |
| Ann[b] | 12- 9 | | N.O.[a] | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Dot[d] | 9- 9 | | N.O.[a] | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Fred[b] | 7- 7 | | N.O.[a] | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Hal[c] | 6- 2 | | N.O.[a] | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Jan[c] | 4- 3 | | N.O.[a] | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Ken[c] | 3- 1 | | N.O.[a] | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Liz[c] | 2- 1 | | N.O.[a] | N.O. | N.O. | N.O. | N.O. | N.O. | | |

FIELD TRIAL DATA

| | 5 | 4 | 3 | 2b | 2a | 1 |
|---|---|---|---|---|---|---|
| No. Passing Item | 0 | 0 | 2 | 4 | 5 | 5 |
| No. Failing Item | 0 | 5 | 3 | 1 | 0 | 0 |

Index of Consistency ;Index not computed;limited opportunity to observe

JURY RATINGS

| | 5 | 4 | 3 | 2b | 2a | 1 | INDEX |
|---|---|---|---|---|---|---|---|
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | 4.50 | 3.88 | 3.67 | 2.63 | | 1.06 | |
| Variability (Q Values) | 1.01 | .92 | .90 | .52 | | .28 | |
| Median Significance Ratings | 2.92 | 2.92 | 3.00 | 3.00 | | 3.00 | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .49** |
| Ch.Dev.Specialists | | | | | | | .57* |
| O. & M. Specialists | | | | | | | .90** |
| Teachers of the Blind | | | | | | | .10 |

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[d] Item 2 was divided into 2a and 2b since two separate behaviors were involved

[a] Reguires observation in home setting

[b] Child does not use school bus

[c] Item not appropriate for preschool children

[d] School bus not available at time of observation

## TABLE V (continued)

USING DOORS, WINDOWS AND DRAWERS 9c

1 Locates and identifies doors, windows and drawers

2 Tells general functions of doors, windows and drawers as wholes

3 Manipulates working parts of doors, windows and drawers to learn operations

4 Operates common doors, windows and drawers correctly and easily

| PUPILS | C.A. | Ref.No.: | 3 | 4 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | 4 | |
| Bob | 11-10 | | + | + | + | + | 4 | |
| Fred | 7- 7 | | + | + | + | + | 4 | |
| Hal | 6- 2 | | + | + | + | + | 4 | |
| Cal | 10- 3 | | - | + | + | + | 3 | |
| Eva | 8- 4 | | - | + | + | + | 3 | |
| Gay | 6- 2 | | - | + | + | + | 3 | |
| Iva | 5- 6 | | - | + | + | + | 3 | |
| Dot | 9- 9 | | - | - | + | + | 2 | |
| Jan | 4- 3 | | - | - | + | + | 2 | |
| Ken | 3- 1 | | + | - | - | - | 1 | |
| Liz | 2- 1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 5 | 8 | 10 | 10 | | |
| No. Failing Item | | | 7 | 4 | 2 | 2 | | |
| Index of Consistency | | | | | | | | .80 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 2.66 | 3.40 | 2.40 | 1.00 | | |
| Variability (Q Values) | | | .68 | .50 | .90 | .00 | | |
| Median Significance Ratings | | | 2.80 | 2.92 | 2.92 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .62** |
| Ch.Dev.Specialists | | | | | | | | .60 |
| O. & M. Specialists | | | | | | | | .67 |
| Teachers of the Blind | | | | | | | | .46 |

TABLE V (continued)

SEATING ONESELF 9d

1 Seats himself with assistance

2 Seats self with partial independence

3 Seats himself independently

4 Seats self independently in correct position at table or desk#

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | 4 | |
| Bob | 11-10 | | + | + | + | + | 4 | |
| Cal | 10- 3 | | + | + | + | + | 4 | |
| Dot | 9- 9 | | + | + | + | + | 4 | |
| Eva | 8- 4 | | + | + | + | + | 4 | |
| Fred | 7- 7 | | + | + | + | + | 4 | |
| Gay | 6- 2 | | + | + | + | + | 4 | |
| Hal | 6- 2 | | + | + | + | + | 4 | |
| Iva | 5- 6 | | + | + | + | + | 4 | |
| Jan | 4- 3 | | + | + | + | + | 4 | |
| Ken | 3- 1 | | - | - | + | + | 2 | |
| Liz | 2- 1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 10 | 10 | 11 | 11 | | |
| No. Failing Item | | | 2 | 2 | 1 | 1 | | |
| Index of Consistency; Index not computed because of small number of failures | | | | | | | | |
| JURY RATINGS | | | | | | | | |
| Order in Dev. Sequence | | | | | | | | |
| Median Ratings | | | 3.20 | 3.75 | 1.94 | 1.00 | | |
| Variability (Q Values) | | | .68 | .44 | .28 | .00 | | |
| Median Significance Ratings | | | 2.92 | 3.00 | 3.00 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .84** |
| Ch.Dev.Specialists | | | | | | | | .87* |
| O. & M. Specialists | | | | | | | | .87* |
| Teachers of the Blind | | | | | | | | .87* |

TABLE V (continued)

SHAKING HANDS 10b

1 Shakes hands with sighted person in recommended manner

2 Responds with firm grip

3 Shakes handswith blind person in recommended manner

| PUPILS | C.A. | Ref.No.: | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | |
| FIELD TRIAL DATA | | | | | | | |
| No. Passing Item | | | | | | | |
| No. Failing Item | | | | | | | |
| Index of Consistency | | | | | | | |
| JURY RATINGS | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | | | 2.86 | 1.25 | 1.80 | | |
| Variability (Q Values) | | | .32 | .51 | .50 | | |
| Median Significance Ratings | | | 2.80 | 2.80 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .42** |
| Ch.Dev.Specialists | | | | | | | .67 |
| O. & M. Specialists | | | | | | | .16 |
| Teachers of the Blind | | | | | | | .67 |

## TABLE V (continued)

UNDERSTANDING TURNS 10c

1 Makes complete turn in place

2 Turns around upon request to face opposite direction

3 Turns quarter turn upon request

4 Turns to establish a diagonal line of travel

5 Turns above given angles stated in terms of degrees

| PUPILS | C.A. | Ref.No.: 5 | 4 | 3 | 1 | 2 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | + | + | + | + | + | 5 | |
| Bob | 11-10 | - | + | + | + | + | 4 | |
| Cal | 10- 3 | - | + | + | + | + | 4 | |
| Eva | 8- 4 | - | + | + | + | + | 4 | |
| Fred | 7- 7 | - | + | + | + | + | 4 | |
| Hal | 6- 2 | - | + | + | + | + | 4 | |
| Gay | 6- 2 | - | + | - | + | + | 3 | |
| Iva | 5- 6 | - | - | + | + | + | 3 | |
| Jan | 4- 3 | - | - | + | + | + | 3 | |
| Dot | 9- 9 | - | - | + | - | + | 2 | |
| Ken | 3- 1 | - | - | - | - | - | 0 | |
| Liz | 2- 1 | - | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | 1 | 7 | 9 | 9 | 10 | | |
| No. Failing Item | | 11 | 5 | 3 | 3 | 2 | | |
| Index of Consistency | | | | | | | | .70 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | 4.17 | 4.70 | 3.00 | 1.30 | 1.83 | | |
| Variability (Q Values) | | .67 | .47 | .50 | .80 | .34 | | |
| Median Significance Ratings | | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .69** |
| Ch.Dev.Specialists | | | | | | | | -- |
| O. & M. Specialists | | | | | | | | .73* |
| Teachers of the Blind | | | | | | | | .81** |

## TABLE V (continued)

**ORIENTING EFFECTIVELY IN EATING 11a**

1 Uses hands to locate position of foods on plate or tray

2 Locates food on plate in response to verbal directions

3 Serves self from serving dish

4 Pours liquid successfully

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | |
| **FIELD TRIAL DATA** | | | | | | | | |
| No. Passing Item | | | | | | | | |
| No. Failing Item | | | | | | | | |
| Index of Consistency | | | | | | | | |
| **JURY RATINGS** | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.38 | 3.60 | 2.06 | 1.00 | | |
| Variability (Q Values) | | | .57 | .49 | .28 | .00 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 3.00 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .82** |
| Ch.Dev.Specialists | | | | | | | | .67 |
| O. & M. Specialists | | | | | | | | .87* |
| Teachers of the Blind | | | | | | | | .87* |

## TABLE V (continued)

USING UTENSILS IN EATING 11b

1 Eats with spoon, unassisted
2 Eats with fork, assisted
3 Eats with fork, unassisted
4 Detects presence or absence of food on spoon or fork
5 Eats liquids with spoon successfuly
6 Cuts foods with fork
7 Uses knife and fork together to cut food

| PUPILS | C.A. | Ref.No.: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | | | | |
| FIELD TRIAL DATA | | | | | | | | | | | |
| No. Passing Item | | | | | | | | | | | |
| No. Failing Item | | | | | | | | | | | |
| Index of Consistency | | | | | | | | | | | |
| JURY RATINGS | | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | | |
| Median Ratings | | | 6.25 | 5.17 | 5.50 | 4.00 | 3.50 | 2.70 | 1.30 | | |
| Variability (Q Values) | | | .54 | .75 | 1.42 | 1.75 | 1.00 | .55 | .55 | | |
| Median Significance Ratings | | | 2.92 | 2.92 | 3.00 | 2.92 | 3.00 | 2.80 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | | | | |
| All Jurors | | | | | | | | | | | .52** |
| Ch.Dev.Specialists | | | | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | | | | .84** |
| Teachers of the Blind | | | | | | | | | | | .93** |

## TABLE V (continued)

WALKING UP AND DOWN STEPS IIc

1 Goes up and down steps with assistance of sighted person

2 Goes up and down steps, using railing or wall for support

3 Goes up and down steps one foot at a time, without assistance

4 Goes up and down steps, alternating forward foot without assistance

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | + | + | + | + | 4 | |
| Bob | 11-10 | | + | + | + | + | 4 | |
| Cal | 10- 3 | | + | + | + | + | 4 | |
| Dot | 9- 9 | | - | + | + | + | 3 | |
| Gay | 6- 2 | | - | + | + | + | 3 | |
| Iva | 5- 6 | | - | + | + | + | 3 | |
| Jan | 4- 3 | | - | + | + | + | 3 | |
| Eva | 8- 4 | | - | - | + | + | 2 | |
| Ken[a] | 3- 1 | | N.O. | N.O. | N.O. | + | 1 | |
| Liz | 2- 1 | | - | - | - | + | 1 | |
| Fred[a] | 7- 7 | | N.O. | N.O. | N.O. | N.O. | | |
| Hal[a] | 6- 2 | | N.O. | N.O. | N.O. | N.O. | | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 3 | 7 | 8 | 10 | | |
| No. Failing Item | | | 6 | 2 | 1 | 0 | | |
| Index of Consistency | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.86 | 3.00 | 1.92 | 1.14 | | |
| Variability (Q Values) | | | .32 | .45 | .38 | .33 | | |
| Median Significance Ratings | | | 2.92 | 3.00 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .69** |
| Ch.Dev.Specialists | | | | | | | | .40 |
| O. & M. Specialists | | | | | | | | .87* |
| Teachers of the Blind | | | | | | | | .67 |

[a] In the testing of this child, no stairs were available

## TABLE V (continued)

DEMONSTRATING BALANCE IId

1 Stoops or squats without losing balance

2 Throws ball without losing balance

3 Negotiates ramps without losing balance

4 Walks balance board successfully

5 (Omitted from field trial)

6 Balances objects being carried

| PUPILS | C.A. | Ref.No.: 5 | 4 | 6 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Ann | 12- 9 | | - | + | + | + | + | 4 | |
| Bob | 11-10 | | - | + | + | + | + | 4 | |
| Cal | 10- 3 | | - | + | + | + | + | 4 | |
| Fred | 7- 7 | | - | + | + | + | + | 4 | |
| Hal | 6- 2 | | - | + | + | + | + | 4 | |
| Dot | 9- 9 | | - | - | + | + | + | 3 | |
| Eva | 8- 4 | | - | - | + | + | + | 3 | |
| Gay | 6- 2 | | - | - | + | + | + | 3 | |
| Jan | 4- 3 | | - | + | N.O.[a] | + | + | 3 | |
| Liz | 2- 1 | | - | - | - | - | + | 1 | |
| Iva | 5- 6 | | - | - | N.O.[a] | + | + | 2 | |
| Ken | 3- 1 | | - | - | N.O.[a] | + | + | 2 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | 0 | 6 | 8 | 11 | 12 | | |
| No. Failing Item | | | 12 | 6 | 1 | 1 | 0 | | |
| Index of Consistency | | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | 2.75 | 5.75 | 4.86 | 1.37 | 4.33 | 1.25 | | |
| Variability (Q Values) | | 1.17 | 1.19 | .66 | .64 | .75 | .69 | | |
| Median Significance Ratings | | 3.00 | 2.38 | 3.00 | 2.92 | 2.80 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .44** |
| Ch.Dev.Specialists | | | | | | | | | .34 |
| O. & M. Specialists | | | | | | | | | .73** |
| Teachers of the Blind | | | | | | | | | .21 |

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[a] No ramp available

TABLE V (continued)

CRAWLING 12a

1 Crawls homologously

2 Crawls homolaterally

3 Crawls with cross pattern

| PUPILS | C.A. | Ref.No.: | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|

Omitted before field trial on the basis of staff assessment of jury reactions

| | 3 | 2 | 1 | INDEX |
|---|---|---|---|---|
| FIELD TRIAL DATA | | | | |
| No. Passing Item | | | | |
| No. Failing Item | | | | |
| Index of Consistency | | | | |
| JURY RATINGS | | | | |
| Order in Dev.Sequence | | | | |
| Median Ratings | 3.00 | 2.00 | 1.00 | |
| Variability (Q Values) | .00 | .00 | .00 | |
| Median Significance Ratings | 2.67 | 2.33 | 1.75 | |
| Average Inter-judge Correlations | | | | |
| All Jurors | | | | 1.00** |
| Ch.Dev.Specialists | | | | 1.00 |
| O. & M. Specialists | | | | 1.00 |
| Teachers of the Blind | | | | - - |

## TABLE V (continued)

**CLIMBING 12b**

1 Attempts to climb on sturdy objects
2 Climbs up on sturdy object
3 Climbs up on objects offering limited support
4 Climbs play equipment with assistance
5 Climbs play equipment independently
6 Climbs down play equipment with assistance
7 Climbs down play equipment independently

| PUPILS | C.A. | Ref.No.: 7 | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | + | + | + | + | + | + | + | 7 | |
| Cal | 10- 3 | + | + | + | + | + | + | + | 7 | |
| Dot | 9- 9 | + | + | + | + | + | + | + | 7 | |
| Eva | 8- 4 | + | + | + | + | + | + | + | 7 | |
| Fred | 7- 7 | + | + | + | + | + | + | + | 7 | |
| Gay | 6- 2 | + | + | + | + | + | + | + | 7 | |
| Hal | 6- 2 | + | + | + | + | + | + | + | 7 | |
| Iva | 5- 6 | + | + | + | + | + | + | + | 7 | |
| Jan | 4- 3 | + | + | + | + | + | + | + | 7 | |
| Ken | 3- 1 | + | + | + | + | + | + | + | 7 | |
| Liz | 2- 1 | - | - | - | - | - | + | + | 2 | |
| Ann[a] | 12- 9 | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |

| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | INDEX |
|---|---|---|---|---|---|---|---|---|
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | 10 | 10 | 10 | 10 | 10 | 11 | 11 | |
| No. Failing Item | 1 | 1 | 1 | 1 | 1 | 0 | 0 | |
| Index of Consistency; Index not computed; small number of failures | | | | | | | | |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | 6.75 | 5.20 | 5.63 | 3.86 | 3.14 | 2.00 | 1.00 | |
| Variability (Q Values) | .44 | .50 | .67 | .33 | .32 | .00 | .00 | |
| Median Significance Ratings | 2.92 | 2.63 | 2.92 | 2.63 | 2.63 | 3.00 | 2.92 | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .89** |
| Ch.Dev.Specialists | | | | | | | | .91** |
| O. & M. Specialists | | | | | | | | .97** |
| Teachers of the Blind | | | | | | | | .75** |

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[a] No equipment on campus

## TABLE V (continued)

**HOPPING AND SKIPPING 12c**

1 Balances on either foot
2 Hops on dominant foot
3 Hops on both feet, alternately
4 Gallops with dominant foot leading
5 Skips with dominant foot leading

| PUPILS | C.A. | Ref.No.: | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Ann | 12-9 | | + | + | + | + | + | 5 | |
| Bob | 11-10 | | + | + | + | + | + | 5 | |
| Cal | 10-3 | | + | + | + | + | + | 5 | |
| Dot | 9-9 | | + | + | + | + | + | 5 | |
| Eva | 8-4 | | + | - | + | + | + | 4 | |
| Hal | 6-2 | | - | + | + | + | + | 4 | |
| Fred | 7-7 | | - | - | + | + | + | 3 | |
| Gay | 6-2 | | + | + | - | - | + | 3 | |
| Iva | 5-6 | | - | + | - | + | - | 2 | |
| Dan | 4-3 | | - | - | - | - | + | 1 | |
| Ken | 3-1 | | - | - | - | - | - | 0 | |
| Liz | 2-1 | | - | - | - | - | - | 0 | |
| **FIELD TRIAL DATA** | | | | | | | | | |
| No. Passing Item | | | 6 | 7 | 7 | 8 | 9 | | |
| No. Failing Item | | | 6 | 5 | 5 | 4 | 3 | | |
| Index of Consistency | | | | | | | | | .71 |
| **JURY RATINGS** | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 4.60 | 2.75 | 3.87 | 2.00 | 1.40 | | |
| Variability (Q Values) | | | .61 | 1.13 | .58 | .45 | 1.12 | | |
| Median Significance Ratings | | | 2.63 | 2.25 | 2.80 | 2.80 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .29** |
| Ch.Dev.Specialists | | | | | | | | | .46 |
| O. & M. Specialists | | | | | | | | | -.14 |
| Teachers of the Blind | | | | | | | | | .04 |

TABLE V (continued)

MOVING EFFICIENTLY--INDOORS 12d

1 Walks about interior of his home with assistance
2 Walks about room alone
3 Walks alone from one room to another [#]
4 Walks alone to kitchen from any room in his home [#]
5 Walks alone about friend's home after familiarization [#]
6 Walks alone to designated rooms from any room in friend's home [#]

| PUPILS | C.A. | Ref.No.: | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Jan | 4-3 | | N.O.[a] | N.O.[a] | + | + | + | + | 4 | |
| Ken | 3-1 | | N.O.[a] | N.O.[a] | + | + | + | + | 4 | |
| Liz | 2-1 | | N.O.[a] | N.O.[a] | + | + | + | + | 4 | |
| Ann[b] | 12-9 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Bob[b] | 11-10 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Cal[b] | 10-3 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Dot[b] | 9-9 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Eva[b] | 8-4 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Fred[b] | 7-7 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Gay[b] | 6-2 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Hal[b] | 6-2 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Iva[b] | 5-6 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| FIELD TRIAL DATA | | | | | | | | | | |
| No. Passing Item | | | 0 | 0 | 3 | 3 | 3 | 3 | | |
| No. Failing Item | | | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Index of Consistency; Index not computed; Limited opportunity for observation | | | | | | | | | | |
| JURY RATINGS | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | |
| Median Ratings | | | 6.00 | 5.00 | 3.63 | 2.78 | 1.63 | 1.40 | | |
| Variability (Q Values) | | | .00 | .00 | .78 | .48 | .57 | 1.22 | | |
| Median Significance Ratings | | | 2.80 | 2.92 | 2.92 | 3.00 | 3.00 | 2.80 | | |
| Average Inter-judge Correlations | | | | | | | | | | |
| All Jurors | | | | | | | | | | .78** |
| Ch.Dev.Specialists | | | | | | | | | | .88** |
| O. & M. Specialists | | | | | | | | | | .73** |
| Teachers of the Blind | | | | | | | | | | .61* |

[a] Opportunity to observe child in friend's home not available
[b] Item can be tested only in home environment

## TABLE V (continued)

MOVING EFFICIENTLY--OUTDOORS 13a

1 Walks independently within own yard
2 Goes to adjoining yards accompanied
3 Goes to adjoining yards alone
4 Goes about freely on his own block
5 Goes to house or other objective around corner
6 Crosses street with sighted guide
7 Crosses designated streets alone

| PUPILS | C.A. | Ref.No.: | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan | 4-3 | | - | N.V. | - | - | - | + | + | 2 | |
| Ken | 3-1 | | - | N.V. | - | - | - | + | + | 2 | |
| Liz | 2-1 | | - | N.V. | - | - | - | - | + | 1 | |
| Ann[a] | 12-9 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Bob[a] | 11-10 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Cal[a] | 10-3 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Dot[a] | 9-9 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Eva[a] | 8-4 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Fred[a] | 7-7 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Gay[a] | 6-2 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Hal[a] | 6-2 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| Iva[a] | 5-6 | | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | N.O. | | |
| **FIELD TRIAL DATA** | | | | | | | | | | | |
| No. Passing Item | | | 0 | | 0 | 0 | 0 | 2 | 3 | | |
| No. Failing Item | | | 3 | | 3 | 3 | 3 | 1 | 0 | | |
| Index of Consistency; Index not computed; Limited opportunity for observation | | | | | | | | | | | |
| **JURY RATINGS** | | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | | |
| Median Ratings | | | 7.00 | 5.83 | 4.83 | 4.25 | 3.10 | 2.00 | 1.17 | | |
| Variability (Q Values) | | | .00 | .84 | .17 | .88 | .40 | .50 | .34 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 2.92 | 3.00 | 2.90 | 2.63 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | | | | |
| All Jurors | | | | | | | | | | | .78** |
| Ch.Dev.Specialists | | | | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | | | | .81** |
| Teachers of the Blind | | | | | | | | | | | .70** |

[a] Item can be tested only in home environment

TABLE V (continued)

USING FAMILIARIZATION TECHNIQUES FOR SELF ORIENTATION 13b

1 Explores room with sighted guide #

2 Trails perimeter of room

3 Checks objects within reach from the perimeter

4 Recognizes relationships of objects to each other

5 Estimates distance

| PUPILS | C.A. | Ref.No.: | 5 | 2 | 3 | 4 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | | N.V. | - | + | + | + | 3 | |
| Dot | 9-9 | | N.V. | - | + | + | + | 3 | |
| Eva | 8-4 | | N.V. | - | + | + | + | 3 | |
| Fred | 7-7 | | N.V. | - | + | + | + | 3 | |
| Gay | 6-2 | | N.V. | - | + | + | + | 3 | |
| Hal | 6-2 | | N.V. | - | + | + | + | 3 | |
| Ann | 12-9 | | N.V. | - | - | + | + | 2 | |
| Cal | 10-3 | | N.V. | - | - | + | + | 2 | |
| Iva | 5-6 | | N.V. | - | - | - | + | 1 | |
| Jan[a] | 4-3 | | N.V. | N.O. | N.O. | N.O. | N.O. | | |
| Ken[a] | 3-1 | | N.V. | N.O. | N.O. | N.O. | N.O. | | |
| Liz[a] | 2-1 | | N.V. | N.O. | N.O. | N.O. | N.O. | | |
| **FIELD TRIAL DATA** | | | | | | | | | |
| No. Passing Item | | | | 0 | 6 | 8 | 9 | | |
| No. Failing Item | | | | 9 | 3 | 1 | 0 | | |
| Index of Consistency | | | | | | | | | 1.00 |
| **JURY RATINGS** | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 4.17 | 2.25 | 3.25 | 4.70 | 1.08 | | |
| Variability (Q Values) | | | .67 | .54 | .54 | .55 | .29 | | |
| Median Significance Ratings | | | 3.00 | 2.92 | 2.92 | 3.00 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .58** |
| Ch.Dev.Specialists | | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | | .94** |
| Teachers of the Blind | | | | | | | | | .40 |

[a] Item not appropriate for preschool children

TABLE V (continued)

USING THE TELEPHONE 13c

1 Identifies telephone by sound
2 (Item 2 omitted from field trial)
3 Answers telephone
4 Makes calls with assistance
5 Makes calls independently

| PUPILS | C.A. | Ref.No.: | 5 | 3 | 4 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12-9 | | + | + | + | + | 4 | |
| Cal | 10-3 | | + | + | + | + | 4 | |
| Dot | 9-9 | | + | + | + | + | 4 | |
| Eva | 8-4 | | + | + | + | + | 4 | |
| Fred | 7-7 | | + | + | + | + | 4 | |
| Gay | 6-2 | | + | + | + | + | 4 | |
| Hal | 6-2 | | - | + | + | + | 3 | |
| Iva | 5-6 | | - | - | - | + | 1 | |
| Ken | 3-1 | | - | - | - | + | 1 | |
| Bob[a] | 11-10 | | N.O. | N.O. | N.O. | N.O. | | |
| Liz | 2-1 | | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | 6 | 7 | 8 | 10 | | |
| No. Failing Item | | | 5 | 4 | 3 | 1 | | |
| Index of Consistency | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 5.00 | 2.75 | 4.00 | 1.00 | | |
| Variability (Q Values) | | | .00 | .44 | .00 | .00 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 3.00 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .96** |
| Ch.Dev.Specialists | | | | | | | | .94** |
| O. & M. Specialists | | | | | | | | .94** |
| Teachers of the Blind | | | | | | | | .94** |

[a] No telephone in home

## TABLE V (continued)

DRESSING 14a

1 (Item 1 omitted from field trial)
2 Puts on coat or simple garment with assistance
3 Puts on coat or simple garment unassisted
4 Puts on most clothing which zips #
5 Puts on most clothing which buttons
6 Dresses self except for tying bowknots
7 Dresses self completely

| PUPILS | C.A. | Ref.No.: 4 | 6 | 7 | 3 | 5 | 2 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Ann | 12-9 | + | + | + | + | + | + | 6 | |
| Fred | 7-7 | + | + | + | + | + | + | 6 | |
| Bob | 11-10 | - | + | + | + | + | + | 5 | |
| Dot | 9-9 | - | + | + | + | + | + | 5 | |
| Hal | 6-2 | - | + | + | + | + | + | 5 | |
| Eva | 8-4 | - | N.O.[a] | + | + | + | + | 4 | |
| Cal | 10-3 | - | - | - | - | + | + | 2 | |
| Gay | 6-2 | - | - | - | - | + | + | 2 | |
| Iva | 5-6 | - | - | - | - | + | + | 2 | |
| Jan | 4-3 | - | - | - | - | + | + | 2 | |
| Ken | 3-1 | - | - | - | - | - | + | 1 | |
| Liz | 2-1 | - | - | - | - | - | - | 0 | |
| **FIELD TRIAL DATA** | | | | | | | | | |
| No. Passing Item | | 2 | 5 | 6 | 6 | 10 | 11 | | |
| No. Failing Item | | 10 | 6 | 6 | 6 | 2 | 1 | | |
| Index of Consistency | | | | | | | | | 1.00 |
| **JURY RATINGS** | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | 4.00 | 5.86 | 7.00 | 3.06 | 4.92 | 1.40 | | |
| Variability (Q Values) | | .82 | .33 | .00 | .28 | .38 | .50 | | |
| Median Significance Ratings | | 2.90 | 2.90 | 3.00 | 2.90 | 2.90 | 2.90 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .91** |
| Ch.Dev.Specialists | | | | | | | | | .81** |
| O. & M. Specialists | | | | | | | | | .96** |
| Teachers of the Blind | | | | | | | | | .97** |

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[a] Child had only buckle shoes

## TABLE V (continued)

DRINKING 14b

1 Drinks from cup or glass which is held for him
2 Drinks from cup or glass, holding independently
3 Replaces cup or glass on table
4 Uses straw for drinking
5 Uses drinking fountain

| PUPILS | C.A. | Ref.No.: | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Ann | 12-9 | | + | + | + | + | + | 5 | |
| Bob | 11-10 | | + | + | + | + | + | 5 | |
| Cal | 10-3 | | + | + | + | + | + | 5 | |
| Dot | 9-9 | | + | + | + | + | + | 5 | |
| Eva | 8-4 | | + | + | + | + | + | 5 | |
| Fred | 7-7 | | + | + | + | + | + | 5 | |
| Gay | 6-2 | | + | + | + | + | + | 5 | |
| Hal | 6-2 | | + | + | + | + | + | 5 | |
| Iva | 5-6 | | + | + | + | + | + | 5 | |
| Jan | 4-3 | | + | + | + | + | + | 5 | |
| Ken | 3-1 | | - | - | + | + | + | 3 | |
| Liz | 2-1 | | - | - | - | - | + | 1 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | 10 | 10 | 11 | 11 | 12 | | |
| No. Failing Item | | | 2 | 2 | 1 | 1 | 0 | | |
| Index of Consistency; Index not computed; Small number of failures | | | | | | | | | |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 4.94 | 3.75 | 3.40 | 2.14 | 1.00 | | |
| Variability (Q Values) | | | .23 | .50 | .57 | .33 | .00 | | |
| Median Significance Ratings | | | 2.92 | 2.63 | 3.00 | 3.00 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .78** |
| Ch.Dev.Specialists | | | | | | | | | .94** |
| O. & M. Specialists | | | | | | | | | .54 |
| Teachers of the Blind | | | | | | | | | .81** |

## TABLE V (continued)

UNDRESSING 14c

1 Pushes down or takes off unfastened clothing
2 Removes sweater or shirt
3 Removes zippered clothing
4 Manages front and side buttons
5 Undresses independently
6 Hangs or places clothing in order

| PUPILS | C.A. | Ref.No.: | 6 | 3 | 5 | 4 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Ann | 12-9 | | + | + | + | + | + | + | 6 | |
| Eva | 8-4 | | + | + | + | + | + | + | 6 | |
| Fred | 7-7 | | + | + | + | + | + | + | 6 | |
| Gay | 6-2 | | + | + | + | + | + | + | 6 | |
| Bob | 11-10 | | - | + | + | + | + | + | 5 | |
| Cal | 10-3 | | - | + | + | + | + | + | 5 | |
| Dot | 9-9 | | - | + | + | + | + | + | 5 | |
| Hal | 6-2 | | - | + | + | + | + | + | 5 | |
| Jan | 4-3 | | - | + | + | + | + | + | 5 | |
| Iva | 5-6 | | - | - | + | + | + | + | 4 | |
| Ken | 3-1 | | - | - | - | - | + | + | 2 | |
| Liz | 2-1 | | - | - | - | - | - | + | 1 | |
| FIELD TRIAL DATA | | | | | | | | | | |
| No. Passing Item | | | 4 | 9 | 10 | 10 | 11 | 12 | | |
| No. Failing Item | | | 8 | 3 | 2 | 2 | 1 | 0 | | |
| Index of Consistency | | | | | | | | | | 1.00 |
| JURY RATINGS | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | |
| Median Ratings | | | 5.86 | 3.20 | 5.14 | 3.75 | 1.87 | 1.06 | | |
| Variability (Q Values) | | | .33 | .67 | .33 | .44 | .47 | .38 | | |
| Median Significance Ratings | | | 3.00 | 2.92 | 3.00 | 2.92 | 2.92 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | | |
| All Jurors | | | | | | | | | | .87** |
| Ch.Dev.Specialists | | | | | | | | | | .91** |
| O. & M. Specialists | | | | | | | | | | .85** |
| Teachers of the Blind | | | | | | | | | | .93** |

TABLE V (continued

IDENTIFYING ESSENTIAL PARTS OF THE BODY 14d

1 Touches mouth upon request

2 Touches extremities upon request

3 Touches different parts of body upon request

4 Identifies by naming all essential parts of body

| PUPILS | C.A. | Ref.No.: 3 | 4 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|
| Ann | 12-9 | + | + | + | + | 4 | |
| Bob | 11-10 | + | + | + | + | 4 | |
| Cal | 10-3 | + | + | + | + | 4 | |
| Dot | 9-9 | + | + | + | + | 4 | |
| Fred | 7-7 | + | + | + | + | 4 | |
| Gay | 6-2 | + | + | + | + | 4 | |
| Hal | 6-2 | + | + | + | + | 4 | |
| Iva | 5-6 | + | + | + | + | 4 | |
| Jan | 4-3 | + | + | + | + | 4 | |
| Eva | 8-4 | - | + | + | + | 3 | |
| Ken | 3-1 | - | - | + | + | 2 | |
| Liz | 2-1 | - | - | - | + | 1 | |

FIELD TRIAL DATA

| | 3 | 4 | 2 | 1 |
|---|---|---|---|---|
| No. Passing Item | 9 | 10 | 11 | 12 |
| No. Failing Item | 3 | 2 | 1 | 0 |

Index of Consistency; Index not computed; Small number of failures

JURY RATINGS

| | 3 | 4 | 2 | 1 | INDEX |
|---|---|---|---|---|---|
| Order in Dev.Sequence | | | | | |
| Median Ratings | 3.02 | 3.60 | 2.04 | 1.00 | |
| Variability (Q Values) | .60 | .57 | .32 | .00 | |
| Median Significance Ratings | 2.92 | 2.92 | 2.80 | 2.63 | |
| Average Inter-judge Correlations | | | | | |
| All Jurors | | | | | .69** |
| Ch.Dev.Specialists | | | | | 1.00** |
| O. & M. Specialists | | | | | .55 |
| Teachers of the Blind | | | | | .46 |

## TABLE V (continued)

ESTABLISHING IDEA OF RELATIVE SIZE 15a

1 Reports difference between big and little #

2 Reports difference between tall and short

3 Reports difference between long and short

4 Names common coins identified by their size

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Ann | 12-9 | | + | + | + | + | 4 | |
| Eva | 8-4 | | + | + | + | + | 4 | |
| Fred | 7-7 | | + | + | + | + | 4 | |
| Hal | 6-2 | | + | + | + | + | 4 | |
| Iva | 5-6 | | + | + | + | + | 4 | |
| Bob | 11-10 | | - | + | + | + | 3 | |
| Cal | 10-3 | | - | + | + | + | 3 | |
| Dot | 9-9 | | - | + | + | + | 3 | |
| Gay | 6-2 | | - | + | + | + | 3 | |
| Jan | 4-3 | | - | + | + | + | 3 | |
| Ken | 3-1 | | - | - | - | - | 0 | |
| Liz | 2-1 | | - | - | - | - | 0 | |

| FIELD TRIAL DATA | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| No. Passing Item | 5 | 10 | 10 | 10 |
| No. Failing Item | 7 | 2 | 2 | 2 |

Index of Consistency; Index not computed; Small number of failures

| JURY RATINGS | 4 | 3 | 2 | 1 | INDEX |
|---|---|---|---|---|---|
| Order in Dev.Sequence | | | | | |
| Median Ratings | 3.60 | 2.00 | 3.25 | 1.14 | |
| Variability (Q Values) | .40 | .45 | .85 | .32 | |
| Median Significance Ratings | 2.80 | 2.80 | 2.80 | 2.92 | |
| Average Inter-judge Correlations | | | | | |
| All Jurors | | | | | .43** |
| Ch.Dev.Specialists | | | | | .60 |
| O. & M. Specialists | | | | | 1.00** |
| Teachers of the Blind | | | | | -.07 |

## TABLE V (continued)

ORGANIZING MATERIALS AND TOOLS 15b

1 Returns possessions to their specific places
2 Places study materials in consistent position
3 Reaches for objects in an efficient manner
4 Places tools in order of use

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | |
| **FIELD TRIAL DATA** | | | | | | | | |
| No. Passing Item | | | | | | | | |
| No. Failing Item | | | | | | | | |
| Index of Consistency | | | | | | | | |
| **JURY RATINGS** | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 2.50 | 1.50 | 2.50 | 3.17 | | |
| Variability (Q Values) | | | 1.00 | .75 | .84 | .67 | | |
| Median Significance Ratings | | | 2.50 | 3.00 | 2.90 | 2.90 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .02 |
| Ch.Dev.Specialists | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | .46 |
| Teachers of the Blind | | | | | | | | -.47 |

## TABLE V (continued)

**ESTABLISHING IDEA OF SHAPE 15c**

1 Identifies simple shapes
2 Distinguishes between simple and more complex objects
3 Identifies relatively more complex geometric shapes
4 Reports relation of shape to purpose of objects
5 Identifies parts of an object by shape
6 Identities differences in action of objects which relate to shape

| PUPILS | C.A. | Ref.No.: | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|

Omitted before field trial on the basis of staff assessment of jury reactions

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FIELD TRIAL DATA | | | | | | | |
| No. Passing Item | | | | | | | |
| No. Failing Item | | | | | | | |
| Index of Consistency | | | | | | | |
| JURY RATINGS | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | 4.67 | 3.63 | 3.88 | 5.85 | 3.00 | 1.06 | |
| Variability (Q Values) | 1.40 | .96 | .53 | .32 | 1.25 | .28 | |
| Median Significance Ratings | 2.80 | 2.92 | 2.92 | 2.92 | 3.00 | 2.92 | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .46** |
| Ch.Dev.Specialists | | | | | | | .24 |
| O. & M. Specialists | | | | | | | .91** |
| Teachers of the Blind | | | | | | | .43 |

TABLE V (continued)

ESTABLISHING IDEA OF BODY POSITION AND LOCATION 15d

1 Assumes basic postural positions

2 Changes the position of his body by action

3 Reports how a change in his location modifies his relation to areas about him

4 Reports his position and location in relation to the features of a room

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|

Omitted before field trial on the basis of staff assessment of jury reactions

| | 4 | 3 | 2 | 1 | | |
|---|---|---|---|---|---|---|
| FIELD TRIAL DATA | | | | | | |
| No. Passing Item | | | | | | |
| No. Failing Item | | | | | | |
| Index of Consistency | | | | | | |
| JURY RATINGS | | | | | | |
| Order in Dev.Sequence | | | | | | |
| Median Ratings | 3.13 | 3.33 | 2.14 | 1.14 | | |
| Variability (Q Values) | .60 | .68 | .32 | .32 | | |
| Median Significance Ratings | 2.92 | 2.92 | 2.80 | 2.80 | | |
| Average Inter-judge Correlations | | | | | | |
| All Jurors | | | | | | .27* |
| Ch.Dev.Specialists | | | | | | -.20 |
| O. & M. Specialists | | | | | | .87* |
| Teachers of the Blind | | | | | | -.20 |

TABLE V (continued)

ESTABLISHING IDEA OF WEIGHT AND RELATED FUNCTIONS 16b

1 Selects objects grossly different in weight

2 Identifies movable objects because of weight

3 Reports in weight terms on volume or amounts in a container

4 Selects object requiring fine discrimination in weight

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | |
| FIELD TRIAL DATA | | | | | | | | |
| No. Passing Item | | | | | | | | |
| No. Failing Item | | | | | | | | |
| Index of Consistency | | | | | | | | |
| JURY RATINGS | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | |
| Median Ratings | | | 3.83 | 2.93 | 2.00 | 1.17 | | |
| Variability (Q Values) | | | .59 | .29 | .50 | .17 | | |
| Median Significance Ratings | | | 2.90 | 3.00 | 2.50 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | |
| All Jurors | | | | | | | | .38** |
| Ch.Dev.Specialists | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | 1.00** |
| Teachers of the Blind | | | | | | | | -.34 |

### TABLE V (continued)

ESTABLISHING IDEA OF DISTANCE 16c

1 Reports relative distance in terms of proximity to self
2 Reports relative distance between objects which can be tactually explored
3 Reports relative distances from starting position to destination
4 Reports on need to use car, bus, or airplane to reach some destinations
5 Reports that moving toward destination shortens distance
6 Reports which is the shorter of two alternate routes to same destination

| PUPILS | C.A. | Ret.No.: | 6 | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | | | |
| **FIELD TRIAL DATA** | | | | | | | | | | |
| No. Passing Item | | | | | | | | | | |
| No. Failing Item | | | | | | | | | | |
| Index of Consistency | | | | | | | | | | |
| **JURY RATINGS** | | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | | |
| Median Ratings | | | 5.25 | 4.25 | 4.25 | 4.00 | 1.38 | 1.63 | | |
| Variability (Q Values) | | | .88 | .69 | .88 | 1.03 | .85 | .47 | | |
| Median Significance Ratings | | | 3.00 | 2.75 | 2.90 | 3.00 | 2.90 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | | | |
| All Jurors | | | | | | | | | | .62** |
| Ch.Dev.Specialists | | | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | | | .52* |
| Teachers of the Blind | | | | | | | | | | .73** |

TABLE V (continued)

USING AIR CURRENTS AS CUES 16d

1 Locates openings in a room

2 Reports that openings are closed by noting absence of air currents #

3 Locates cross corridors

4 Reports space between buildings

5 Reports presence of large object in the environment

| PUPILS | C.A. | Ref.No.: | 5 | 4 | 3 | 1 | 2 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Bob | 11-10 | | + | + | + | + | + | 5 | |
| Fred | 7-7 | | N.V.[a] | + | + | + | + | 4 | |
| Gay | 6-2 | | + | - | + | + | + | 4 | |
| Hal | 6-2 | | N.V.[a] | N.V.[a] | + | + | + | 3 | |
| Cal | 10-3 | | N.V.[a] | N.V.[a] | N.V.[a] | + | + | 2 | |
| Dot | 9-9 | | - | - | - | + | + | 2 | |
| Iva | 5-6 | | - | - | + | - | + | 2 | |
| Ann | 12-9 | | - | - | - | - | - | 0 | |
| Eva | 8-4 | | - | - | - | - | - | 0 | |
| Jan | 4-3 | | - | - | - | - | - | 0 | |
| Ken | 3-1 | | - | - | - | - | - | 0 | |
| Liz | 2-1 | | - | - | - | - | - | 0 | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | 2 | 2 | 5 | 6 | 7 | | |
| No. Failing Item | | | 7 | 8 | 6 | 6 | 5 | | |
| Index of Consistency | | | | | | | | | .75 |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 3.00 | 4.25 | 3.33 | 1.20 | 2.33 | | |
| Variability (Q Values) | | | 1.13 | .84 | .69 | .85 | 1.00 | | |
| Median Significance Ratings | | | 2.92 | 2.92 | 2.92 | 2.92 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .14 |
| Ch.Dev.Specialists | | | | | | | | | - - |
| O. & M. Specialists | | | | | | | | | .54 |
| Teachers of the Blind | | | | | | | | | -.34 |

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[a] Could not be sure which variables were operating

TABLE V (continued)

EXTENDING EXPERIENCES IN EATING 17a

1 Accepts soft foods
2 Accepts different flavors in food
3 Accepts different textures in food
4 Accepts finger foods
5 Accepts solid foods

| PUPILS | C.A. | Ref. No.: | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | | |
| FIELD TRIAL DATA | | | | | | | | | |
| No. Passing Item | | | | | | | | | |
| No. Failing Item | | | | | | | | | |
| Index of Consistency | | | | | | | | | |
| JURY RATINGS | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 3.12 | 4.08 | 3.12 | 3.00 | 1.14 | | |
| Variability (Q Values) | | | 1.69 | .38 | .75 | 1.51 | .32 | | |
| Median Significance Ratings | | | 2.92 | 2.80 | 2.92 | 2.92 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .35** |
| Ch.Dev.Specialists | | | | | | | | | .70* |
| O. & M. Specialists | | | | | | | | | .54 |
| Teachers of the Blind | | | | | | | | | .04 |

## TABLE V (continued)

**ACCEPTING AND SHOWING AFFECTION 17b**

1 Accepts fondling and expressions of love from both parents
2 Seeks physical contact with parents
3 Tolerates strangers
4 Responds to familiar persons outside immediate family

| PUPILS | C.A. | Ref.No.: | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|

Omitted before field trial on the basis of staff assessment of jury reactions

| | 4 | 3 | 2 | 1 | INDEX |
|---|---|---|---|---|---|
| FIELD TRIAL DATA | | | | | |
| No. Passing Item | | | | | |
| No. Failing Item | | | | | |
| Index of Consistency | | | | | |
| JURY RATINGS | | | | | |
| Order in Dev.Sequence | | | | | |
| Median Ratings | 3.06 | 3.94 | 1.86 | 1.14 | |
| Variability (Q Values) | .28 | .28 | .16 | .32 | |
| Median Significance Ratings | 3.00 | 2.80 | 3.00 | 3.00 | |
| Average Inter-judge Correlations | | | | | |
| All Jurors | | | | | .88** |
| Ch.Dev.Specialists | | | | | .87* |
| O. & M. Specialists | | | | | .87* |
| Teachers of the Blind | | | | | .87* |

TABLE V (continued)

USING KINESTHETIC CUES 17c

1 Reports which of two routes is longer

2 Reports which of two objects is larger

3 Reports which of two objects is higher

4 Reports when he has reached bottom or top of familiar staircase without counting

| PUPILS | C.A. | Ref.No.: 4 | 1 | 2 | 3 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|
| Ann | 12-9 | + | + | + | + | 4 | |
| Cal | 10-3 | - | + | + | + | 3 | |
| Eva | 8-4 | - | + | + | + | 3 | |
| Dot | 9-9 | - | - | + | + | 2 | |
| Fred | 7-7 | N.O.[a] | + | - | + | 2 | |
| Gay | 6-2 | - | - | + | + | 2 | |
| Hal | 6-2 | N.O.[a] | - | + | + | 2 | |
| Iva | 5-6 | - | - | + | + | 2 | |
| Jan | 4-3 | N.O.[a] | - | - | + | 1 | |
| Bob | 11-10 | - | - | - | - | 0 | |
| Ken | 3-1 | N.O.[a] | - | - | - | 0 | |
| Liz | 2-1 | N.O.[a] | - | - | - | 0 | |
| **FIELD TRIAL DATA** | | | | | | | |
| No. Passing Item | | 1 | 4 | 7 | 9 | | |
| No. Failing Item | | 6 | 8 | 5 | 3 | | |
| Index of Consistency | | | | | | | .43 |
| **JURY RATINGS** | | | | | | | |
| Order in Dev.Sequence | | | | | | | |
| Median Ratings | | 3.00 | 3.86 | 1.06 | 2.08 | | |
| Variability (Q Values) | | .45 | .34 | .28 | .38 | | |
| Median Significance Ratings | | 3.00 | 3.00 | 2.92 | 2.92 | | |
| Average Inter-judge Correlations | | | | | | | |
| All Jurors | | | | | | | .76** |
| Ch.Dev.Specialists | | | | | | | .67 |
| O. & M. Specialists | | | | | | | .87* |
| Teachers of the Blind | | | | | | | .67 |

[a] No stairs available

TABLE V (continued)

USING SIMPLE TOOLS 17d

1 Identifies simple tools and their working parts
2 Manipulates simple tools to gain knowledge of working parts
3 Uses simple tools for construction
4 Uses edge of paper as reference point
5 Uses non-working hand as a guide in following a pattern

| PUPILS | C.A. | Ret.No.: | 5 | 4 | 3 | 2 | 1 | SCALE SCORE | INDEX |
|---|---|---|---|---|---|---|---|---|---|
| Omitted before field trial on the basis of staff assessment of jury reactions | | | | | | | | | |
| **FIELD TRIAL DATA** | | | | | | | | | |
| No. Passing Item | | | | | | | | | |
| No. Failing Item | | | | | | | | | |
| Index of Consistency | | | | | | | | | |
| **JURY RATINGS** | | | | | | | | | |
| Order in Dev.Sequence | | | | | | | | | |
| Median Ratings | | | 4.50 | 4.17 | 2.83 | 2.00 | 2.00 | | |
| Variability (Q Values) | | | .59 | .33 | .84 | .50 | 1.42 | | |
| Median Significance Ratings | | | 3.00 | 3.00 | 2.90 | 2.90 | 3.00 | | |
| Average Inter-judge Correlations | | | | | | | | | |
| All Jurors | | | | | | | | | .34** |
| Ch.Dev.Specialists | | | | | | | | | .67 |
| O. & M. Specialists | | | | | | | | | .04 |
| Teachers of the Blind | | | | | | | | | - - |

## RECOMMENDATIONS RELATING TO DEVELOPMENT AND USE OF THE SCALES

### General

1. Although the scales described herein have been tried out and will be normed on children of ages 2-12, the scales are primarily intended for use from kindergarten through grade 6. While some scales include preschool items, these items are included primarily to provide a floor for school age children, i.e., to provide a basis for assessing the skills of blind children who have had little preschool assistance.

2. An advanced edition of the scales for secondary school students should be developed to include cane skills and perhaps some additional skills relating to independence in travel.

3. A preschool edition of the scales does not seem to be indicated since several of the developmental scales which are now available deal with many of the motor skills which are basic to orientation and mobility.

### Experimental Edition of Scales

The scales which proved to be effective in the field trial will form the nucleus for the experimental edition of the scales. Certain scales which were judged to be significant by the jury but appeared less promising in the preliminary field trial should be revised and readministered during the more extensive field trial which will provide the basis for age norms. The data for each sub-scale in TABLE V provided the basis for staff judgment concerning sub-scales to be retained and modifications needed as indicated by the results from jury reactions and preliminary field trial.

1. The following specific modifications in sub-scales are recommended,

   (a) The following sub-scales should be dropped:

   16d Air Currents (unable to eliminate other variables which provide cues; thus, the sub-scale lacks validity).

17c Kinesthetic Cues (unable to eliminate other variables which provide cues; thus, the sub-scale lacks validity)

| | | |
|---|---|---|
| 12d | Moving Efficiently--Outside) | Since these items pertain exclusively to the home environment, they are inappropriate for an instrument which is designed for use in elementary schools |
| | and ) | |
| 13a | Moving Efficiently--Inside ) | |

(b) The items from each of the following pairs of sub-scales which meet staff criteria should be combined into a single, more effective sub-scale:

1c Using Auditory Cues--Human Voices
1a Using Auditory Cues--Games

1b Using Auditory Cues--Orientation
7b Using Auditory Cues--Travel

3b Using Tactual Cues
3a Using Difference in Textures of Terrain

2. The following recommendations apply to items within a sub-scale.

(a) The following items should be revised since they involve more than one skill and hence posed problems in testing:

11c Walking Up and Down Steps. (separate items should be devised for walking up steps independently and walking down steps independently, with and without alternating the forward foot).

1b-6 Uses Familiar Sound to Estimate Distances.(two variables are involved--sound and distance).

2c-6 Runs Freely and Willingly. (this item should be revised to read "Runs Freely";child may run willingly but not freely or vice versa).

(b) The following items involve two skills and probably should be revised even though they seemed to pose no problems in the testing situation:

9a-1 Enters and Leave Auto
9b-1 Enters and Leaves School Bus
9b-3 Enters and Leaves School Bus
9b-3 Enters and Leaves School Bus
9c-1 Locates and Identifies Doors, Windows and Drawers

(c) The following pairs of items involve overlapping skills. Hence, in the administration of the scale, the child's performance on the first item of the pair may be used to evaluate the second item, also.

11d-2 Throws Ball Without Losing Balance
1a-2 Throws Ball in Direction of Auditory Cue

9b-5 Reaches Neighborhood Bus Stop Without Assistance
4c-4 Travels Familiar Route Alone

6d-2 Reports to Sighted Guide Location of His Home in Relation to Others on Block
6d-3 Locates His Home When Approaching from Either Direction (above items should be combined as both cover the same idea of location).

(d) The following items should be stated more precisely:

5b-5 Substitutes Other Techniques in Appropriate Situation (define "other" more exactly).
6c-3 Uses Right and Left Consistently as an Aid to Travel (omit word "consistently" and substitute "as needed").

(e) The following items should probably be omitted:

9b-5 Reaches Neighborhood Bus Stop Without Assistance (cannot be observed at school).
4a-7 Reverses Above Route (see 4a-6: Travels Route Requiring Three Turns and Following Curved Lines because not all environments provide routes involving curved lines).

3. The following major categories are suggested for grouping the sub-scales:

Locomotion and Motor Skills
Orientation and Mobility Techniques (including related living skills)
Use of Sensory Cues
Understanding of Spatial Relationships

## Preparation of Manual

The instructions and standards for passing which were used in the field edition of the scales must be refined and expanded to serve as a manual for the Experimental Edition. While the scales will be used only by professional personnel who have had training in the techniques of orientation and mobility, the manual must be explicit if results are to be reliable and comparable. The purpose of each sub-scale must be stated, special terms must be defined, instructions must be carefully worded and standards for passing must be carefully explained.

Reliability of Study

Before the scales can be made available for wide-scale use, data must be obtained on their reliability. The best basis for assessing the reliability for this type of scale would be to have pairs of examiners score the performance of at least 20 children at each age level. The reliability will be determined by having the children rated independently by two examiners. We are proposing that this reliability study involve 20 children at each of three age levels (6-9-12). Examiners would have studied the manual and would have had supervised experience in rating several children. This study would provide a basis for judging how reliably the scales could be used by persons who had not participated in the experience of developing them. For sub-scales for which the reliability of recently trained examiners was too low, improvement in directions for administration or more explicit standards for passing might be indicated.

Preliminary Norms

It is proposed that the Experimental Edition of the Scales be used with a representative population of blind children, so that preliminary age norms could be established. The outline of the procedures to be employed is:

Children from at least three geographically distributed centers in the United States will be chosen from the blind population of ages 3-12, according to the following criteria:

1. Group A. Total Blind Children--100

| | | |
|---|---|---|
| Ages | 3-4 | 20 |
| | 5-6 | 20 |
| | 7-8 | 20 |
| | 9-10 | 20 |
| | 11-12 | 20 |

2. Group B. Children with light perception--light projection--100

| | | |
|---|---|---|
| Ages | 3-4 | 20 |
| | 5-6 | 20 |
| | 7-8 | 20 |
| | 9-10 | 20 |
| | 11-12 | 20 |

3. The percentage of boys and girls in the norming sample shall be typical of general population of blind children.

4. The distribution of intelligence quotients in the norming sample shall be judged to be representative of the general population of blind children.

5. Children in the norming sample shall be free from hearing defects or motor defects which might seriously impair the development of orientation and mobility skills.

6. The norming sample shall be representative with respect to school background,i.e., it shall include a representative percentage of children who have had preschool counseling service and/or nursery school experience.

All examiners will be trained by a staff member who has participated in the development of the scales and has administered them in the preliminary field trial reported in this study.

## Concluding Statement

Details regarding the assessment of each sub-scale and each item have been presented in this section. Promising sub-scales are recommended for the extensive field trial and norming process in the next phase of the project.

1. While the initial field trial was indeed a very preliminary effort, it was justified on the basis of giving the staff a chance to see how the instrument worked out with actual cases. The field trial data on scalability proved valuable as a supplement to the jury data. Many observations were made which will assist the staff in revision of the instrument and preparation of the manual for the extensive field trial and the norming process.

2. Thirty-five very promising sub-scales were identified. These include twenty-four of the twenty-seven sub-scales for which the Index of Consistency could be computed. In fact, they represent all the sub-scales in TABLE IV except 16d and 17c. Sub-scales 1b and 7b will be combined into one sub-scale.

3. An additional eleven sub-scales for which the Index of Consistency could not be computed on the basis of the limited data from the preliminary field trial (TABLE III) are recommended for use in the experimental edition:

| | |
|---|---|
| 2a | Exploring |
| 5b | Trailing |
| 6b | Cardinal Dir. |
| 7c | Sighted Guide |
| 8b | Search Pattern |
| 9b | School Bus |
| 9d | Seating Oneself |
| 12b | Climbing |
| 14b | Drinking |
| 14d | Parts of Body |
| 15a | Idea of Size |

With additional data on cases at the preschool and upper levels, the staff anticipates that all these sub-scales will meet the criterion of scalability.

4. The preliminary field trial was limited to children who were totally blind, since the staff wished to test the feasibility of these sub-scales with such children. In the more extensive field trial and norming process next year, results will be obtained and summarized separately for age groups of totally blind children and children with light perception. Instruction in orientation and mobility techniques should prove especially valuable for the children who have light perception; and, these scales will be of value in assessing their special needs.

5. It is hoped that the scales will be especially useful for experimental studies which involve the testing of a variety of approaches to orientation and mobility instruction. The scales should also be helpful in studies relating to factors other than instruction which influence the development of childrens' skills in orientation and mobility, e.g., home instruction, amount of vision, personality factors, and especially attitudinal factors.

   The scales should be helpful in assessing a child's readiness for next steps in orientation and mobility instruction. For example, they may also be of value in judging a child's readiness for instruction in cane techniques. If the evaluation of a child shows that he is achieving at eight what most blind children achieve at ten, one can infer that he could be given cane instruction earlier.

   It is anticipated that when norming data are available, performance on certain scales will be found to be closely correlated with age; progress in the skills measured by such scales may depend chiefly on physical maturation.

   Performance on other sub-scales will probably only show a moderate correlation with age.

   Progress in skills measured by such sub-scales may depend chiefly on the motivation of the child and his training in specific techniques.

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# APPENDIX A

## JURY EDITION OF SCALES
## and
## INSTRUCTIONS TO THE JURY

This Scale is intended to be a diagnostic instrument for teachers of blind children. It is assumed that some items include skills which two-year olds can perform. The upper level of development for some items is approximately twelve years. There is no uniform age range for all items.

The Scale is built upon the assumption that a blind child of normal ability, given maximum opportunity for training and experience, should approximate the developmental rate of a normal sighted child.

If a sighted child is expected to walk at 13-14 months, the blind child, with equal capacity, proper stimulation and assistance, should do likewise. Therefore, in the selection of skills for the scale, the authors have drawn upon developmental data for normal children.

There are, however, many compensatory skills which the blind child must develop in order to manage his environment. Many of these skills are identified in the Scale.

As a member of the jury, you are asked to assist with the scaling of the subskills for each major item. The combined jury and staff judgments will be used to draft the first experimental edition of the Scale.

### GENERAL INSTRUCTIONS

Members of the jury are composed of experts in child development, orientation and mobility specialists and experienced teachers of the blind. Each has been assigned an I.D. number.

Your I.D. number /______/

These identifications have been recorded on the items. Please be sure your correct identification appears on each slip.

Your packet of materials includes:

1. Instructions to jury members
2. All major skills - two per page
3. Classified list of titles of major skills
4. The list of subskills on perforated slips
5. Glossary of terms used by orientation and mobility specialists
6. Envelope with registered mail card for return.

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NOTE TO READER:

The jury copy of the Instructions and Scales are reproduced in condensed form in this Appendix. The original copy was arranged with two scales per page.

Instructions to Jury (continued)

Instructions for returning the material:

1. Return all major skills via Registered Mail.
2. Return Instructions
3. Destroy the perforated practice slips. You need not return them.

You may wish to read the full list of items through before you react to the individual items. This will help you see the scope of the Scale.

Ignore the numbers and letters associated with each major skill. (e.g. 1a, 5c) These numbers merely identify the item on our master list.

Some major skills relate to specific orientation and mobility techniques which may not be familiar to the child development specialist.

The child development specialists may omit them entirely, if they are unable to make comfortable judgments. In this case, mark the entire item OMIT.

Special terms used by orientation and mobility specialists are underscored. These terms will be familiar to some members of the jury; others will need to consult the glossary of terms which is attached.

If you believe two subskills are of equal difficulty or belong together, in a natural sequence, then use the same numbers for both of them, i.e. 2-3 or 3-4. However, avoid this practice if possible. Your best judgment regarding a rank order is preferred, since dual ratings are of little value in arriving at an order for the final sequence.

## YOUR ASSIGNMENT

FIRST: Read for clarity, each item title (for the moment, ignore the balance of the item).
(a) Is the title clear and understandable?
If not, indicate by a comment in the margin as to how it should be modified.

SECOND: Read each major item and the subskills.
(a) Is the statement clear?
If not, indicate by a comment in the margin as to how it should be modified.

THIRD: Rank the subskills in developmental order. Consider the order or sequence of the subskills. What is the developmental or natural sequences of these subskills?

Practice slips are provided to assist you with the arrangement.
After you have decided on the order, write "1" in the blank to the left (preceding) the skill that is first in the developmental sequence.
Write "2" preceding the skill that is second in the developmental sequence, etc.
Continue until all subskills have been numbered.

FOURTH: Review the rank order assigned to be sure that you have done it correctly. e.g. can you think of children who do subskill one but not the others? Children who can do "1","2" and "3" but not the others?

Instructions to Jury (continued)

FIFTH: Read for significance.
How significant do you consider each subskill to be in developing adequate orientation and mobility skills for the blind? Report your evaluations in the square boxes, to the right of each subskill, using the following code:

V = Very significant, indispensable
S = Of average significance; valuable but the child could manage fairly well without it
L = Of little importance

SIXTH : Be sure your I.D. number is indicated in the box, where indicated.

(SAMPLE ITEM)

2-C RUNNING

☐
I.D.

(Indicate Sequence Here) (Indicate Significance Here)

___Runs toward another person ☐

___Runs with one hand held ☐

___Runs freely and willingly in familiar area ☐

___Runs with each hand held by another person ☐

___Runs along side another person ☐

END OF SCALES

SPECIAL INSTRUCTIONS TO THE READER

The reader is reminded that the order of the items of each sub-scale was randomized for submission to the jury. Hence, items in the jury edition do not occur in the order which represents staff judgment concerning developmental sequence.

In order to identify a given sub-scale or item, a system of reference numbers has been used consistently throughout the report. For example, 1a, 1b, 1c and 1d refer to the first four sub-scales of the original edition. The items in each sub-scale are numbered 1,2,3,4, etc. in accordance with original staff judgments concerning the order of these items in developmental sequence.

For the convenience of the reader, these Reference Numbers have been added in the left margin of the jury edition. These numbers did NOT appear on the sub-scales submitted to the jury.

## ORIENTATION AND MOBILITY TERMS

1. ORIENTATION: The process of utilizing the remaining senses in establishing one's position and relationship to all other significant objects in one's environment.
2. MOBILITY: The term used to denote the ability to navigate from one's present fixed position to one's desired position in another part of the environment.
3. LANDMARK: Any familiar object, sound, odor, temperature, or tactual clue that is easily recognized and that has a known and exact location in the environment.
4. POINT OF INFORMATION: A familiar object, sound, odor, temperature, or tactual clue, whose exact location in the environment is known but is more difficult to recognize or perceive than a landmark.
5. LINE OF TRAVEL: Desired straight route.
6. DOMINANT CUE: Of the maze of cues that are present, the one that most adequately fulfills all of the informational needs of that moment.
7. DIRECTION TAKER: Refers to any straight lined fixed object whose surface lines when projected into space will give a course or line of travel in a given direction or to an objective.
8. GUIDE LINE: A line formed by the meeting of two surfaces, in either plane or texture. The line gives the traveler direction and/or location.
9. SIGHTED GUIDE: Sighted person who accompanies a blind person in the recommended manner. (See item 7c).
10. TRAILING: The act of using the back of the fingers or fingernails to follow lightly over a straight surface (e.g. wall, lockers,desks) tables, etc.) for one or all of the following reasons: (a) to determine one's place in space; (b) to locate specific objectives;(c)to get a parallel line of travel.
11. SOUND SOURCES:Objects in environment which produce sounds of their own.
12. SOUND SHADOW: An object in the environment which is between the sound source and the traveler.
13. HAND AND FOREARM TECHNIQUE: The act of protecting the upper part of the body during travel (See item 8a).
14. PINPOINT: Exact location of sound source.
15. PROTECTIVE TECHNIQUE: The act of protecting head and face when stooping (See item 8b)
16. DIRECTION TAKING: The act of getting a line or course from a fixed object or a sound to better facilitate traveling in a straight line toward an objective.
17. SEARCH PATTERN:The act of recovering a dropped object (See item 8b)
18. REFERENCE POINT: A landmark used to determine location of other objects.
19. FAMILIARIZATION: Techniques used by the blind person to explore his environment (See item 3b)
20. LOCALIZATION: To determine the exact bearing or line or direction of the source of a sound.
21. SQUARING OFF: The act of aligning and positioning one's body in relation to an object, for the purpose of getting a line of direction and establishing a definite position in the environment.

# ORIENTATION AND MOBILITY SCALES--JURY EDITION
## PRESCHOOL AND ELEMENTARY LEVELS

### PART A LOCOMOTION

Crawling (12a)
Walking (2b)
Climbing (12b)
Running (2c)
Jumping (2d)
Hopping and Skipping (12c)
Walking Up and Down Steps (11c)
Demonstrating Balance (11d)

### PART B SENSORY CUES IN ORIENTATION AND MOBILITY

Using Tactual Cues (3b)
Using Auditory Cues-Human Voice (1c)
Using Auditory Cues-Games (1a)
Using Auditory Cues-Orientation
Using Auditory Cues-Travel (7b)
Using Multiple Auditory Cues (1d)
Using Olfactory Cues (3d)
Using Temperature (3c)
Using Differences in Textures of Terrain (3a)
Using Differences in Elevation (5d)
Using Air Currents as Cues (16d)
Using Kinesthetic Cues (17c)

### PART C BASIC EXPERIENCES RELATED TO ORIENTATION AND MOBILITY

Identifying Body Parts Directly Related to Orientation and Mobility (14d)
Using Doors, Windows and Drawers (9c)
Using Number Sense (7a)
Establishing Notion of Relative Size (15a)
Establishing Notion of Shape (15c)
Establishing Idea of Position (15d)
Following Instructions with Respect to Turns (10c)
Using Right and Left (6c)
Establishing Concept of Weight and Related Functions (16b)
Establishing Concept of Distance (16c)
Using Cardinal Directions (6b)
Using Street Patterns (6d)

### PART D INTEREST IN NEW EXPERIENCES AND MOVING OUT

Accepting and Showing Affection (17b)
Extending Experiences in Eating (17a)
Exhibiting Curiosity Through Exploration (2a)
Moving Independently-Inside (12d)
Moving Independently-Outside (13a)

Orientation and Mobility Scales--Jury Edition(continued)

PART E BASIC TECHNIQUES OF ORIENTATION AND MOBILITY
  Using Sighted Guide (7c)
  Seating Oneself (9d)
  Using Hand and Forearm Technique (8a)
  Using Search Pattern (8b)
  Shaking Hands (10b)
  Using Trailing Technique (5b)
  Using Familiarization Techniques for Self-Orientation (13b)
  Entering and Leaving an Automobile (9a)
  Using Direction Taking (8c)
  Recalling Landmark Patterns (5a)
  Using Routes on Verbal Instructions (4a)
  Traveling About the School (4c)
  Using School Bus (9b)
  Using the Telephone (13c)

PART F BASIC LIVING SKILLS RELATED TO ORIENTATION AND MOBILITY
  Using Utensils in Eating (11b)
  Orienting Effectively in Eating (11a)
  Drinking (14b)
  Undressing (14c)
  Dressing (14a)
  Organizing and Using Materials and Tools (15b)
  Using Simple Tools (17d)

CRAWLING - 12a

*2 __Crawls homolaterally ☐ i.e. Reaches out right arm and leg pulls, pushes with left arm and leg

3 __Crawls with cross pattern ☐ i.e. Right arm, left leg reach forward, then reverse

1 __Crawls homologously ☐ i.e. Using both arms to pull, then both legs to push

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WALKING - 2b

6 __Points toes in direction of travel

7 __Walks with relaxed gait i.e. Size of steps appropriate to situation. e.g. shortens steps in crowd; walks with even steps; swings arms in normal patterns, right arm comes forward with left foot forward

3 __Cruises i.e. Walks holding to objects

2 __Walks, holding to person

1 __Stands upright without support

5 __Walks with weight properly distributed i.e. Weight on heel and toes alternately

4 __Walks with cross pattern i.e. One foot forward, weight placed, other foot forward

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CLIMBING - 12b

4 __Climbs play equipment with assistance e.g. Climbs slide, jungle gym, with body support

5 __Climbs play equipment independently

6 __Climbs down play equipment with assistance e.g. Body support by adult

2 __Climbs up on sturdy object e.g. Davenport

1 __Attempts to climb on sturdy objects e.g. Tries to pull self up but does not reach objective. i.e. chair seat

7 __Climbs down play equipment independently

3 __Climbs up on objects offering limited support e.g. Armless chair, steps

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RUNNING - 2c

2 __Runs with one hand held

3 __Runs with slight contact of sighted person e.g. Arms barely touching

1 __Runs with support from each side i.e. Between two persons, each holding a hand

5 __Runs toward another person using auditory cue as direction taker e.g. Approximately 20 feet

6 __Runs freely and willingly e.g. In familiar area free of objects

4 __Runs along side another person using auditory cue

*These numbers did NOT appear on the edition submitted to jurors. They indicate staff judgment with respect to the order in the developmental sequence. They can be used in identifying sub-scale items in tables throughout the report.

JUMPING - 2d

4__Jumps off low wall with assistance e.g. Both hands held
5__Jumps off low wall alone
6__Jumps, coordinating other body movements e.g. Self-propelled rope; running in to turning rope
2__Jumps off step e.g. Bottom doorstep
3__Jumps - both feet off ground
1__Jumps with assistance e.g. Both hands held; told to bend knees

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HOPPING AND SKIPPING -12c

2__Hops on dominant foot e.g. Hops at least 3 times
4__Gallops with dominant foot leading e.g. Steps forward on dominant foot, hops on other foot.
1__Balances on either foot
5__Skips with dominant foot leading
3__Hops on both feet, alternately e.g. Hops in place alternating right to left or left to right

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WALKING UP AND DOWN STEPS -11c

2__Goes up and down steps using railing or wall for support
4__Goes up and down steps, alternating forward foot without assistance i.e. One foot per tread
1__Goes up and down steps with assistance of sighted person e.g. One or both hands held
3__Goes up and down steps one foot at a time, without assistance i.e. Forward foot, joined by other foot, on same tread

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DEMONSTRATING BALANCE -11d

4__Walks balance board successfully i.e. Walks eight to twelve feet on four-inch surface of two-by-four which rests on ground. e.g. Edge of sandbox ; edging.
1__Stoops or squats without losing balance. e.g. To retrieve dropped object or to clean up a spill.
2__Throws ball without losing balance. ie. 10" or 12" ball
6__Balances objects being carried e.g. Two stacked blocks; tray in cafeteria
3__Negotiates ramps without losing balance
5__Maintains balance on steps

----------

USING TACTUAL CUES - 3b

2__Uses hands to distinguish differences e.g. Ball, block
4__Makes discriminations between grossly different surfaces and/or textures e.g. Identifies physical features of a room: plaster, glass, wood, blackboard, cotton, burlap
5__Makes fine discrimination between objects of similar textures e.g. Sneakers and oxfords; construction paper and pencil paper
3__Uses feet to distinguish surface differences e.g. Carpet, tile
1__Explores with mouth e.g. Small toys, textures

## USING AUDITORY CUES - HUMAN VOICES -1c

| | |
|---|---|
| 2__Identifies voices of different persons in family | e.g. Mother, Father, Siblings |
| 5__Follows familiar voice to establish line of travel. | e.g. The voice of a child who sits by a library table in the classroom. |
| 1__Localizes a voice | e.g. Turns head, points, reaches toward. |
| 4__Discriminates between different voices to establish position. | e.g. Knows in which direction to face during conversation. |
| 3__Notices strange voice | e.g. Child says, "Who is that?" |

## USING AUDITORY CUES-GAMES -1a

| | |
|---|---|
| 3__Bounces ball to himself, using sound of rebound to catch it. | |
| 1__Moves in direction of an auditory cue. | e.g. Voice, clapping hands in tag and relays. |
| 4__Uses rebound sound to catch ball bounced to him by another person | |
| 2__Throws ball in direction of auditory cue | e.g. 10 or 12-inch ball (ignore efficiency of motor skill) |

## USING AUDITORY CUES-ORIENTATION - 1b

| | |
|---|---|
| 2__Indicates localization of sound in relation to self by turning or pointing. | e.g. Behind, in front, to the side of. |
| 4__Makes sounds to receive echoes | e.g. Clicks tongue, claps hands, snaps fingers. |
| 6__Uses familiar sound to estimate distances | e.g. Relative loudness of school bell; truck motor. |
| 1__Reacts to new sound. | e.g. Shows startle pattern, listens |
| 3__Uses sound cues as landmark or point of information | e.g. Refrigerator motor; sound of lawnmower as it approaches and/or passes |
| 5__Uses increase in intensity of cues as sign of approach | e.g. Moves toward noisy play area |

## USING AUDITORY CUES-TRAVEL 7b

| | |
|---|---|
| 4__Locates object which casts a sound shadow | e.g. "Stop when you are by the parked car" (telephone pole) |
| 5__Locates object which produces an echo | e.g. Large building, recessed store entrance |
| 1__Differentiates between common, plainly distinct sounds. | e.g. Cars, buses, trucks |
| 3__Identifies objects as sound sources during travel | e.g. People, cars |
| 2__Differentiates between common similar sound. | e.g. Footsteps of Mother and Father |

## USING MULTIPLE AUDITORY CUES - 1d

| | |
|---|---|
| 2__Selects and uses dominant cue independently | e.g. A dominant and/or familiar voice in a group; moves toward door at sound of father's step or car. |
| 1__Selects and uses dominant cue with verbal assistance | e.g. "Hear the big truck" |

Using Multiple Auditory Cues 1d(continued)

| | | |
|---|---|---|
| 3 | __Uses multiple cues if called to his attention | e.g. Simultaneous sounds, i.e.traffic , voices, other's footsteps |
| 4 | __Uses multiple cues independently | |

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## USING OLFACTORY CUES - 3d

| | | |
|---|---|---|
| 2 | __Shows recognition of common odors through verbalization | e.g. Recently cut grass, ripe orange, onion. |
| 4 | __Uses odor as an information point and/or landmark | e.g. Antiseptic smell of nurses' office, shoe repair shop, produce department in supermarket |
| 1 | __Uses smell as part of learning | e.g. Child brings object to nose; leather glove, rubber - and asks,"What is this?" |
| 3 | __Comments on distinctive odors. | e.g. Fresh paint, burning wood. |

---

## USING TEMPERATURE CUES - 3c

| | | |
|---|---|---|
| 2 | __Uses temperature cues to identify object. | e.g. Freezer in market; hot oven |
| 3 | __Uses temperature as information point when appropriate | e.g. Sun's warmth, shade |
| 1 | __Compares and comments upon objects of different temperatures | e.g. Chocolate milk, hot chocolate |
| 4 | __Reports accurately objects along hot-cold gradient | e.g. Iced water, cool water; warm water; hot water. |

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## USING DIFFERENCES IN TEXTURES OF TERRAIN-3a

| | | |
|---|---|---|
| 2 | __Uses gross terrain differences during instruction | e.g. Landmarks and/or guidelines |
| 4 | __Adapts, with minimum instruction, when some familiar landmark is altered | e.g. Dirt path paved; sidewalk covered with leaves. |
| 1 | __Identified gross terrain differences during instruction. | e.g. "Is this a paved walk or a gravel walk?" |
| 3 | __Reports and uses terrain differences by himself. | e.g. "Tell me the different kinds of ground you walked on." |

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## USING DIFFERENCES IN ELEVATION - 5d

| | | |
|---|---|---|
| 2 | __Verbalizes an awareness of gradual slopes | e.g. Slight rise in pavement; incline to garage. |
| 3 | __Uses elevation as cue and/or landmark. | e.g. Slanting driveway apron |
| 1 | __Verbalizes about definite changes in elevation. | e.g. Ramps - slanting driveways |

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## USING AIR CURRENTS AS CUES - 16d

| | | |
|---|---|---|
| 2 | __Reports that openings are closed by absence of air currents. | e.g. No air current in an accustomed place. |

Using Air Currents as Cues 16d(continued)

| | |
|---|---|
| 5__ Reports presence of large object in the environment. | e.g. Absence of air currents caused by a building or wall or fence. |
| 4__Reports space between buildings | |
| 3__Locates cross corridors | |
| 1__Locates openings in a room. | e.g. Door openings; window opening. |

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USING KINESTHETIC CUES - 17c

| | |
|---|---|
| 1__Reports which of two routes is longer. | i.e. Walks two routes of varying distances. |
| 4__Reports when he has reached bottom or top of familiar staircase without counting. | i.e. "Tell me when you reach the top (or bottom).How did you know?" |
| 2__Reports which of two objects is larger. | e.g. Explores with hands; walks around davenport and chair. |
| 3__Reports which of two objects is higher. | e.g. Stove or refrigerator. |

---------------

IDENTIFYING ESSENTIAL PARTS OF THE BODY - 14d

| | |
|---|---|
| 3__Touches different parts of body upon request. | i.e. Those parts of the body typically referred to during instruction in orientation and mobility.<br>e.g. Shoulders,waist,ankles, knees, ears, head, nose. |
| 4__Identifies by naming all essential parts of the body. | |
| 2__Touches extremities upon request | i.e. Hand, fingers; feet, toes. |
| 1__Touches mouth upon request. | e.g. "Show me your mouth." |

--------------------

USING DOORS, WINDOWS AND DRAWERS - 9c

| | |
|---|---|
| 2__Tells general functions of doors, windows and drawers as wholes. | e.g. A drawer is to pull out or put things in; a door is to go through or out. |
| 1__Locates and identifies doors, windows and drawers. | |
| 3__Manipulates working parts of doors, windows and drawers to learn operation. | e.g. Function of hinges and doorknobs; relationship of key and lock; controls opening of drawer by weight and tilt. |
| 4__Operates common doors, windows and drawers correctly and easily | e.g. Hinged, sliding and swinging doors; casement, sliding and sash windows. |

------------------

COUNTING FOR ORIENTATION -7a

| | |
|---|---|
| 4__Understands ordinal numbers to 5th | e.g. "Go to the third door." |
| 5__Demonstrates knowledge of equivalent values of coins. | e.g. Counts coins, makes change for a dollar. |

## Counting for Orientation -7a(continued)

| | | |
|---|---|---|
| 3 | __Counts by 5's, 10's to 100 | e.g. Counts pennies,nickels and dimes |
| 2 | __Uses counting to establish position | e.g. Counts number of doors along a corridor. |
| 1 | __Counts by ones to five | |

---

## ESTABLISHING IDEA OF RELATIVE SIZE -15a

| | | |
|---|---|---|
| 2 | __Reports differences between tall and short | e.g. "Who is taller, Mother or Father?" |
| 1 | __Reports differences between big and little, using various sensory cues | e.g. Orange, grapefruit; size of rooms in house; balls of different size. |
| 4 | __Names common coins identified by their size | |
| 3 | __Reports difference between long and short | e.g. Long and short toy blocks |

---

## ESTABLISHING IDEA OF SHAPE -15c

| | | |
|---|---|---|
| 6 | __Identifies differences in action of objects which relate to shape | e.g. Round things roll; flat things slide. |
| 5 | __Identifies parts of an object by shape | e.g. Segments of orange; pages of book. |
| 4 | __Reports relation of shape to purpose of objects | e.g. Saucers and cups; handles and knobs |
| 2 | __Distinguishes between simple and more complex objects | e.g. Straight chair - arm chair |
| 1 | __Identifies simple shapes | e.g. Round ball, cube |
| 3 | __Identifies relatively complex shapes. | e.g. Oval,i.e. egg; cylindrical,i.e. pipe; conical,i.e. ice cream cone; rectangular,i.e. teacher's desk; triangular,i.e. rhythm instrument, "Triangle". |

---

## ESTABLISHING IDEA OF BODY POSITION AND LOCATION -15d

| | | |
|---|---|---|
| 4 | __Reports his position and location in relation to the features of a room. | e.g. Ceiling above or overhead; floor below; walls beside; corner; middle of room |
| 1 | __Assumes basic postural positions | e.g. "Show me the three ways in which you can change your posture."(sit stand, lie down) |
| 2 | __Changes the position of his body by action | e.g. "Show me three ways you can change your body position by moving." (roll, fall down, run) |
| 3 | __Reports how a change in his location modifies his relation to areas about him. | e.g. "Where are you when you go out the door?"(outdoors) 'Where are you when you go up the stairs?'(Upstairs) |

## FOLLOWING INSTRUCTIONS WITH RESPECT TO TURNS -10c

| | |
|---|---|
| 2__Turns around upon request to face opposite direction. | i.e. Approximates 180° - half turn |
| 3__Turns quarter turn upon request. | i.e. Approximates 90° - square corner |
| 1__Makes complete turn in place. | i.e. Approximates 360° - full turn |
| 5__Turns above given angles stated in terms of degrees. | e.g. Approximates commonly used angles (180°, 360°, 90°, 45°) |
| 4__Turns to establish diagonal line of travel. | e.g. Approximates 45°, one corner to opposite corner. |

---

## USING RIGHT AND LEFT - 6c

| | |
|---|---|
| 2__Responds correctly to a command to turn right or left. | |
| 3__Uses right and left consistently as an aid to travel. | e.g. Asks for directions in terms of right and left. |
| 4__Distinguishes right and left in environment. | e.g. Recognizes left and right on body of another; traffic on left will be on the right coming back. |
| 1__Distinguishes right and left on his own body. | e.g. Shows right hand; left hand. |

---

## ESTABLISHING IDEA OF WEIGHT AND RELATED FUNCTIONS - 16b

| | |
|---|---|
| 2__Identifies movable objects because of weight | e.g. "Can you move the refrigerator?" |
| 4__Selects object requiring fine discrimination in weight. | e.g. "Is there food in your spoon?" |
| 3__Reports in weight terms on volume or amounts in a container | e.g. "Glass is getting heavy, it must be nearly full." |
| 1__Selects objects grossly different in weight. | e.g. Baseball, tennis ball |

---

## ESTABLISHING IDEA OF DISTANCE - 16c

| | |
|---|---|
| 6__Reports which is the shorter of two alternate routes to same destination. | e.g. "Which is the shorter way to the corner, around the block or down the street?" |
| 1__Reports relative distance in terms of proximity to self. | e.g. So close to a person in a crowd you touch and cannot move. A little apart, you can touch by stretching arms to full length. So far apart, cannot reach. |
| 5__Reports that moving toward destination shortens distance from goal. | e.g. As he gets farther from home, he gets nearer to school. |
| 4__Reports on need to use car, bus or airplane to reach some destinations. | e.g. Too far from school to walk. Visit relatives in another state. |
| 2__Reports relative distance between objects which can be tactually explored. | e.g. Sides of an object can be close together - opposite sides of a small box. Sides of an object can be far apart. Very large box. |

Establishing Idea of Distance -16c(continued)

| | |
|---|---|
| 3__Reports relative distances to destination. | e.g. Child says, "It is farther to John's home than to Amy's home." "The office is nearer than the cafeteria." |

------------------

USING CARDINAL DIRECTIONS- 6b

| | |
|---|---|
| 4__Points out geographic locations on a relief map in terms of cardinal directions. | |
| 1__Knows the direction a familiar building faces | e.g. House faces east |
| 5__Travels a route described in terms of cardinal directions. | e.g. "Go through the door, turn south and walk to the corner. |
| 6__Knows location of other geographic areas in relation to his own community. | e.g. Child says, "California is west of Illinois." |
| 3__Points out cardinal directions in familiar setting. | |
| 2__Demonstrates how a compass works | e.g. Child says, "Needle always points North." Adjusts compass so that needle points to symbol N or Magnetic North. Braille compass used. |

-------------------

USING STREET PATTERNS - 6d

| | |
|---|---|
| 2__Reports to sighted guide location of his home in relation to others on the block. | e.g. "My home is the second from the corner." |
| 3__Locates his home when approaching from either direction. | e.g. By use of various cues such as fence, number of driveways, boulevard stops, intersection dips. |
| 1__Knows street address of his home. | e.g. "On what street do you live?" "What's the number of your home?" |
| 5__Directs driver to his home from a familiar location in neighborhood. | e.g. From school. |
| 6__Knows numbering system on his street and on adjoining blocks. | e.g. Odd and even numbered side of street; block numbering system(200 blk,300bk) |
| 4__Correctly names streets near his home. | e.g. Main intersection, streets around his block. |

-------------------

EXTENDING EXPERIENCES IN EATING - 17a

| | |
|---|---|
| 2__Accepts different flavors in food | e.g. Wheat cereal, oatmeal |
| 4__Accepts finger foods | e.g. Uses opposable grip to pick up bits of food from plate or tray and place in mouth successfully. |
| 1__Accepts soft foods | e.g. Purees, scrambled egg |
| 5__Accepts solid foods | i.e. Chews and swallows |
| 3__Accepts different textures in foods | e.g. Potatoes, rice |

ACCEPTING AND SHOWING AFFECTION -17b

2__Seeks physical contact with parents.

4__Responds to familiar persons outside immediate family e.g. Returns and/or seeks affection of grandparents, baby sitter

1__Accepts fondling and expressions of love from both parents e.g. Kissing, caressing

3__Tolerates strangers

-----------------------

EXPLORING - 2a

3__Explores environment purposefully e.g. Play area to find swing; church area, store.

4__Asks questions about environment e.g. Child says:"Where is your garage?" "What is this?" "How far is your home from mine?"

2__Shows initiative to explore through locomotion. i.e. Does not remain in one place when free to explore.

1__Explores objects within his brachial space. i.e. Manipulates objects within reach, those handed to him.

-------------------

MOVING EFFICIENTLY - INDOORS -12d

5__Walks about friend's home after familiarization.

6__Walks to designated rooms from any room in friend's home. e.g. Kitchen, family room.

4__Walks to kitchen from any room in his home.

1__Walks about interior of his home with assistance.

2__Walks about a room alone. e.g. Trails objects in room.

3__Walks from one room to another. e.g. Adjoining rooms of his home.

-----------------------

MOVING EFFICIENTLY-OUTDOORS -13a

5__Goes to house or other objective around corner.

6__Crosses streets with sighted guide.

7__Crosses designated streets alone e.g. Only those in highly protected areas after basic safety cues are well understood and practiced.

1__Walks independently within own yard. e.g. If living in an apartment,in designated play area

2__Goes to adjoining yards accompanied

3__Goes to adjoining yards alone.

4__Goes about freely on his own block e.g. Does not cross street

USING SIGHTED GUIDE -7c

| | |
|---|---|
| 3__Walks with guide under normal conditions | e.g. Walks to side and one half pace behind guide. |
| 7__Directs sighted guide when necessary | e.g. Familiar route to a destination. |
| 4__Uses positional cues and movement of sighted guide in crowded areas and on steps | e.g. In crowded area or narrow passage, he extends arm and moves directly behind guide when sighted guide pushes his own elbow toward center of his own back.Stays one tread behind on ascending and descending stairs. |
| 2__Grasps sighted guide's arm | e.g. Thumb just above elbow, fingers on body side. |
| 5__Assists in opening and closing doors. | e.g. Drops one pace behind when guide opens door.If the open door is on his side, he holds it open for both to pass through. If door is on guide's side, he momentarily grasps guide's other arm with his opposite hand and extends his arm so that he may hold the door open with the other hand. If the door is not self-closing, the blind person closes it. |
| 1__Holds hand of sighted adult guide. | |
| 8__Instructs companions in sighted guide techniques. | |
| 6__Maintains own alertness and orientation. | e.g. Knows in which direction he is traveling. |

------------------

SEATING ONESELF -9d

| | |
|---|---|
| 3__Seats himself independently | |
| 1__Seats himself with assistance | e.g. Guide places one hand on back of chair, one hand on seat. |
| 4__Seats self in correct position at table or desk | e.g. Uses table or edge of desk as a reference point. |
| 2__Seats self with partial independence. | e.g. Hand placed only on back of chair. |

------------------

## USING HAND AND FOREARM TECHNIQUE - 8a

| | | |
|---|---|---|
| 2__ Employs fingers and palm as additional aid. | e.g. | Extends fingers in relaxed manner, palm facing direction of travel. |
| 4__ Shows independence from techniques when appropriate | | |
| 1__ Holds forearm in recommended position | e.g. | Holds arm parallel to floor, forearm and upper arm forming an obtuse angle (greater than right angle) |
| 3__ Employs opposite arm to locate low objects. | e.g. | Extends arm toward floor and slightly ahead of self; hand below waist. |

---

## USING SEARCH PATTERN - 8b

| | | |
|---|---|---|
| 3__ Starts at point and sweeps a widening circle with dominant hand. | | |
| 1__ Uses auditory cues, when possible to pinpoint location of a dropped object. | | |
| 4__ Sweeps a square pattern | e.g. | Horizontal or vertical, overlapping sweeps, e.g. mopping |
| 2__ Uses protective technique in stooping towards object | e.g. | One arm held up, hand (palm out) protecting face and head |

## SHAKING HANDS - 10b

| | | |
|---|---|---|
| 2__Responds with firm grip. | | |
| 3__Shakes hand with blind person in recommended manner. | e.g. | Moves hand and forearm diagonally across body to meet same movement by another blind person. |
| 1__Shakes hands with sighted person in recommended manner. | e.g. | Moves back of right hand forward toward sighted person. Turns hand to shaking position, forearm and hand perpendicular to floor. |

---

## USING TRAILING TECHNIQUE -5b

| | | |
|---|---|---|
| 2__Uses appropriate hand to trail. | i.e. | Uses right hand when wall or other object is on his right; left hand for objects on left. |
| 3__Uses hand and fingers in approved manner. | i.e. | Holds hand forward of the hip, back of fingers contacting wall or other object. Fingers point down and slightly to the rear. |
| 5__ Substitutes other techniques in appropriate situation. | e.g. | Does not trail when environmental cues such as sounds, changes in terrain or direction takers are available for use. |
| 1__Uses any method to detect objects in his path. | e.g. | Uses hands in exploratory manner. |
| 4__Trails efficiently discovering and avoiding hazards. | e.g. | Drinking fountain, occupied chairs. |

---

## USING FAMILIARIZATION TECHNIQUES FOR SELF ORIENTATION-13b

| | | |
|---|---|---|
| 5__Estimates distance | e.g. | Walks length and width of room to determine dimensions |
| 1__Explores room with sighted guide | e.g. | Guide verbalizes about objects, their purpose and function. |
| 2__Trails perimeter of the room. | | |
| 3__Checks objects within reach from the perimeter. | | |
| 4__Recognizes relation of objects to each other | e.g. | By going from reference point to another known object: doorway to davenport; doorway to desk in classroom. |

---

## ENTERING AND LEAVING AN AUTOMOBILE -9a

| | | |
|---|---|---|
| 2__Discovers for himself direction car is facing. | e.g. | Finds windshield wiper or headlight (by size) nearest curb. |
| 4__Enters and leaves car in manner recommended for maximum safety. | e.g. | One hand on door handle, the other on top door jamb. |
| 3__Enters and leaves car independently using any method | | |
| 1__Enters and leaves with support | e.g. | Adult holds arm and/or supports at waist. |

## USING DIRECTION TAKING- 8c

| | |
|---|---|
| 2__Determines direction of travel in relation to a fixed object | e.g. May turn at different angle from squared position, to travel toward known object. |
| 3__Uses sound sources to establish a course of straight line travel to an object. | e.g. Typewriter |
| 5__Returns directly to starting point | |
| 1__Aligns body squarely with a fixed object to establish position in rrelation to other objects in the environment | e.g. Squares body in open doorway, facing room. |
| 4__Moves directly toward selected goal. | |

------------------

## RECALLING LANDMARK PATTERNS- 5a

| | |
|---|---|
| 2__Follows short new route and recalls one significant landmark. | e.g. Route should suit ability of child and should involve at least three possible landmarks from which he can choose. Observe recall within the da |
| 3__Recalls sequence of landmarks he will encounter in reversing a route he has just completed. | e.g. Three necessary landmarks |
| 1__Refers to landmarks on familiar route in manner meaningful to himself. | e.g. Swing near rough tree |

--------------------

## USING ROUTES ON VERBAL INSTRUCTIONS -4a

| | |
|---|---|
| 2__Travels route with one turn. | e.g. "Go to first corner and turn right (or left);then stop". |
| 1__Travels straight line route and reverses it. | e.g. "Go to end of corridor and stop; then come back." |
| 3__Reverses above route. | |
| 6__Travels route requiring three turns and following curved lines. | |
| 7__Reverses above route. | |
| 4__Travels route involving a combination of one left and one right turn. | e.g. "Go to the corner, turn right to the drinking fountain; then turn left and cross the corridor." |
| 5__Reverses above route. | |

--------------------

## TRAVELING ABOUT THE SCHOOL - 4c

| | |
|---|---|
| 5__Uses more than one discrete route between the same two points. | i.e. Routes do not overlap. |
| 7__Understands inter-relationships of major routes around school. | e.g. Child says:"Going to the cafeteria is the same as going to Room 5,excep that I make a left turn instead of a right turn at the bottom of the ramp". |
| 6__Follows in line of peers without needing physical contact. | e.g. Returning in line from playground to classroom. |
| 1__Requires sighted adult guide. | |

## Traveling About the School -4c (continued)

| | |
|---|---|
| 4 __Travels familiar route alone. | e.g. Classroom to washroom |
| 3 __Travels with sighted group | e.g. Corridor at passing period |
| 2 __Requires sighted peer guide | |

--------------------

## USING THE SCHOOL BUS - 9b

| | |
|---|---|
| 2 __Mounts steps and finds seat independently. | e.g. Uses hand rail to mount steps; trails to locate empty seat. |
| 5 __Reaches neighborhood bus stop without assistance. | |
| 4 __Reaches bus stop at school without assistance | |
| 3 __Leaves bus independently | |
| 1 __Reaches bus, enters and leaves bus with assistance | i.e. Goes to bus at school or neighborhood stop accompanied by sighted adult or peer. Requires help to enter, locate seat and leave bus. |

--------------------

## USING TELEPHONE - 13c

| | |
|---|---|
| 4 __Makes calls with assistance | e.g. Total number dialed for child |
| 3 __Answers telephone | e.g. Answers if in reach. Knows earpiece and mouthpiece of receiver. |
| 5 __Makes calls independently | e.g. Uses any successful method. Uses stop on dial as a reference point. Four fingers of right hand are placed on dial openings number 1 - 4. This is known as home base. Five is dialed by dropping index finger down one opening. To dial 6 through 0, drop hand below stop, placing little finger in '0' opening. To dial 7, index finger moves up one opening. |
| 1 __Identifies telephone by sound | |
| 2 __Talks on telephone | |

## USING UTENSILS IN EATING - 11b

| | | |
|---|---|---|
| 7__ | Uses knife and fork together to cut food | e.g. Meat with and without bones. |
| 4__ | Detects presence or absence of food on spoon or fork | e.g. Difference in weight |
| 1__ | Eats with spoon, unassisted | e.g. Such foods as pudding, cereal, mashed potatoes. |
| 2__ | Eats with fork, assisted | e.g. Hand guided to spear food |
| 3__ | Eats with fork, unassisted | e.g. Uses piece of bread as pusher or stopper |
| 6__ | Cuts foods with fork | e.g. Pie, cake, meat patties |
| 5__ | Eats liquids with spoon successfully | e.g. Soup, juice of fruit |

---

## ORIENTING EFFECTIVELY IN EATING - 11a

| | | |
|---|---|---|
| 3__ | Serves self from serving dish | e.g. Uses edge of serving dish as reference point for locating serving spoon. |
| 4__ | Pours liquid successfully | e.g. Uses tactual cues: places index finger over rim of cup or glass. Also uses sound and weight cues to determine when glass or cup is full. |
| 2__ | Locates food on plate in response to verbal directions | e.g. "Your mashed potatoes are at the top edge and your peas are below them." |
| 1__ | Uses hands to locate position foods on plate or tray. | |

DRINKING -14b

2__Drinks from cup or glass holding independently
4__Uses straw for drinking
1__Drinks from cup or glass which is held for him.
5__Uses drinking fountain e.g. Any kind: hand control,foot control
3__Replace cup or glass on table

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UNDRESSING 14c

2__Removes sweater or shirt e.g. When completely unfastened and loose
4__Manages front and side buttons e.g. Buttons size of nickel or quarter
6__Hangs or places clothing in order e.g. Fits shoulders of clothing to hanger and places in order to find again
5__Undresses independently
3__Removes zippered clothing
1__Pushes down or pulls off unfastened clothing e.g. Shoes, unfastened panties

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DRESSING -14a

2__Puts on coat or simple garment with assistance e.g. Handed to him in correct position
1__Cooperates in dressing e.g. Finds armholes
5__Puts on most clothing which buttons eg. Buttons approximately size of nickel
7__Dresses self completely e.g. Ties shoe laces
6__Dresses self except for tying bowknots e.g. Puts right shoe on right foot.
4__Puts on most clothing which requires zipping e.g. Unseparated zippers
3__Puta on coat or simple garment unassisted e.g. Knows back from front;inside from outside.

--------------------

ORGANIZING MATERIALS AND TOOLS -15b

3__Reaches for objects in an efficient manner. i.e.Uses edge of desk or table as reference point.Moves hand across surface of table or desk,lightly trailing the back of the fingers.
4__Places tools in order of use.
1__Returns possessions to their specific places e.g. Places on shelf or in container
2__Places study materials in consistent position. e.g. Top of desk:braille writer,upper rt. corner;notebook,upper left corner. Inside desk:paper on one side,books on another side;places materials in same order on shelf designated for his use.

--------------------

USING SIMPLE TOOLS -17d

2__Manipulates simple tools to gain knowledge of working parts.
3__Uses simple tools for construction
1__Identifies simple tools and their working parts. e.g.Paint brush,saw,hammer,scissors
5__Uses non-working hand as guide in following a pattern. e.g. While sawing,follows template.
4__Uses edge of paper as reference point. e.g. Cutting,painting

# APPENDIX B

## JURY RATINGS WITH RESPECT TO (A) ORDER IN DEVELOPMENTAL SEQUENCE AND (B) SIGNIFICANCE IN DEVELOPING ADEQUATE ORIENTATION AND MOBILITY SKILLS

| Sub-Scale[a] | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance[b] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| & Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 2 | 2 | 4 | 2 | 4 | 2 | 2 | 2 | 2 | - | - | v | s | l | v | v | v | v |
| 3 | 3 | 3 | 2 | 3 | 2 | 3 | 1 | 4 | 3 | - | - | s | s | s | v | v | v | s |
| 4 | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 3 | 4 | - | - | s | s | s | v | v | v | v |
| 1b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 | - | - | v | v | v | v | s | v | v |
| 2 | 3 | 5 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | - | - | v | v | v | v | v | v | v |
| 3 | 4 | 2 | 5 | 3 | 4 | 4 | 4 | 3 | 4 | - | - | v | v | v | v | v | v | v |
| 4 | 2 | 6 | 3 | 4 | 2 | 3 | 1 | 5 | 2 | - | - | s | s | v | v | l | s | v |
| 5 | 5 | 3 | 6 | 6 | 5 | 5 | 5-6 | 6 | 6 | - | - | s | v | v | v | v | v | v |
| 6 | 6 | 4 | 4 | 5 | 6 | 6 | 5-6 | 4 | 5 | - | - | v | v | v | v | v | v | v |
| 1c | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 3 | 3 | 3 | 2 | 1 | 1 | - | - | v | v | v | v | s | v | v |
| 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 3 | 3 | 2 | 2 | 2 | 5 | 3 | 3 | - | - | v | v | v | v | s | s | v |
| 4 | 4 | 4 | 4 | 4 | 5 | 5 | 3 | 4 | 4 | - | - | v | v | v | v | v | v | v |
| 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| 1d | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | - | - | s | v | v | v | v | v | v |
| 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 1 | - | - | s | v | v | v | v | v | v |
| 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | - | - | s | v | v | v | s | v | v |
| 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | - | - | s | v | v | v | v | v | v |
| 2a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 2 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 3 | - | - | v | v | v | v | v | v | v |
| 4 | 3 | 4 | 4 | 4 | 3 | 4 | 3 | 4 | 4 | - | - | v | v | v | - | s | v | v |
| 2b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 2 | 3 | 1 | 3 | 1 | 3 | - | - | l | v | v | - | v | v | v |
| 2 | 4 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 2 | 2 | 1 | 1 | 2 | 1 | 4 | 1 | - | - | v | v | v | v | v | s | v |
| 4 | 6 | 6 | 4 | 4 | 4 | 6 | 5 | 5 | 5 | - | - | s | v | v | v | s | v | v |
| 5 | 5 | 5 | 6 | 6 | 5 | 5 | 6 | 6 | 6 | - | - | v | v | v | v | v | v | v |
| 6 | 2 | 4 | 5 | 5 | 7 | 4 | 4 | 2 | 4 | - | - | s | v | s | v | s | v | v |
| 7 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | 7 | - | - | s | v | v | v | v | v | v |

[a] The sub-scales are presented here in numerical order, for the convenience of the reader, rather than in the categories as they appear in the jury edition.

[b] Significance: v=very significant; s=of average significance; l=of little importance

*This sub-scale was eliminated by Staff before submission to the jury

## APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| **2c** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | - | 1 | 1 | 1 | 2 | 1 | 1 | 1 | - | - | s | s | v | s | 1 | s | v |
| 2 | 2 | - | 2 | 2 | 2 | 1 | 2 | 2 | 2 | - | - | s | s | v | v | v | v | v |
| 3 | 3 | - | 3 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | s | s | v | v | s | 1 | v |
| 4 | 4 | 1 | 4 | 4 | 5 | 4 | 4 | 4 | 6 | - | - | v | v | v | v | s | v | v |
| 5 | 5 | 2 | 5 | 5 | 4 | 5 | 5 | 6 | 4 | - | - | v | v | v | v | v | v | v |
| 6 | 6 | 3 | 6 | 6 | 6 | 6 | 6 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| **2d** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 3 | 3 | 2 | 3 | 2 | 3 | 4 | 4 | 3 | - | - | s | v | v | v | v | v | v |
| 3 | 2 | 2 | 3 | 2 | 3 | 2 | 2 | 2 | 5 | - | - | 1 | s | v | v | v | v | v |
| 4 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 3 | 2 | - | - | v | v | v | v | s | v | v |
| 5 | 5 | 5 | 5 | 5 | 5 | 6 | 5 | 5 | 4 | - | - | v | s | v | v | s | v | v |
| 6 | 6 | 6 | 6 | 6 | 6 | 4 | 3 | 6 | 6 | - | - | s | s | v | v | v | s | v |
| **3a** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | omit | 1 | 2 | 1 | 1 | 1 | 2 | - | - | omit | v | v | v | v | v | v |
| 2 | 2 | 2 | | 2 | 1 | 2 | 2 | 2 | 1 | - | - | | v | v | v | v | v | v |
| 3 | 4 | 4 | | 3 | 3 | 4 | 3 | 3 | 4 | - | - | | v | v | v | v | v | v |
| 4 | 3 | 3 | | 4 | 4 | 3 | 4 | 4 | 3 | - | - | | v | v | v | v | v | v |
| **3b** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | - | - | v | v | v | v | s | 1 | v |
| 2 | 2 | 2 | 3 | 2 | 2 | 1 | 2 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 3 | 2 | 3 | 3 | 5 | 4 | 3 | 3 | - | - | v | v | v | v | v | v | v |
| 4 | 4 | - | 4 | 4 | 4 | 3 | 3 | 4 | 4 | - | - | v | v | v | v | v | v | v |
| 5 | 5 | - | 5 | 5 | 5 | 4 | 3 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| **3c** | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 3 | - | - | v | v | v | v | v | v | s |
| 2 | 1 | 2 | 1 | 3 | 4 | 2 | 3 | 3 | 1 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 3 | 2 | 4 | 3 | 1 | 4 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 4 | 4 | 4 | 4 | 2 | 2 | 4 | 2 | 4 | 4 | - | - | v | v | v | v | s | v | v |
| **3d** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | - | - | v | v | v | v | v | v | v |
| 2 | 4 | 4 | 3 | 3 | 2 | 2 | 3 | 2 | 1 | - | - | v | v | v | v | v | v | v |
| 3 | 2 | 2 | 4 | 2 | 3 | 4 | 1 | 3 | 3 | - | - | v | v | v | v | s | v | 1 |
| 4 | 3 | 3 | 2 | 4 | 4 | 3 | 4 | 4 | 4 | - | - | v | v | v | v | v | v | v |

## APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 2 | 1 | 1 | 1-2 | 1 | 1 | 1 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 3 | 1 | 3 | 2 | 3 | 2 | 2 | 3 | 3 | - | - | v | v | v | v | v | v | v |
| 3 | 2 | 3 | 2 | 3 | 1-2 | 3 | 3 | 2 | 2 | - | - | s | v | v | v | v | v | v |
| 4 | 4 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | - | - | s | v | v | v | v | v | v |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | - | - | s | v | v | v | v | v | v |
| 6 | 6 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | - | - | s | v | v | v | v | v | v |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | - | - | s | v | v | v | v | v | v |
| *4b | | | | | | | | | | | | | | | | | | |
| 4c | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | s | v | s | v | v | v | v |
| 3 | 2 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 4 | - | - | s | v | s | v | v | v | v |
| 4 | 7 | 5 | 5 | 5 | 3 | 5 | 6 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| 5 | 5 | 6 | 6 | 6 | 7 | 6 | 7 | 6 | 6 | - | - | s | v | v | v | v | v | v |
| 6 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 3 | - | - | v | v | v | v | v | v | v |
| 7 | 6 | 7 | 7 | 7 | 6 | 7 | 5 | 7 | 7 | - | - | s | v | v | v | v | v | v |
| 5a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 2 | 1 | 1 | 1 | 1 | 3 | 1 | 3 | - | - | v | v | v | v | v | v | v |
| 2 | 2 | 1 | 2 | 2 | 3 | 3 | 1 | 2 | 1 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 2 | - | - | v | v | v | v | v | v | v |
| 5b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | - | 3 | 1 | 4 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | 1 | s | v |
| 2 | 2 | - | 1 | 2 | 1 | 2 | 3 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 4 | - | 2 | 4 | 2 | 3 | 2 | 3 | 3 | - | - | s | v | v | v | v | v | v |
| 4 | 3 | - | 4 | 3 | 3 | 4 | 4 | 4 | 4 | - | - | s | v | v | v | v | v | v |
| 5 | 5 | - | 5 | 5 | 5 | 5 | 5 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| *5c | | | | | | | | | | | | | | | | | | |
| 5d | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 3 | 1 | 1 | 3 | 2 | 1 | 1 | - | - | 1 | v | v | v | v | v | s |
| 2 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 3 | 2 | - | - | 1 | v | v | v | s | v | v |
| 3 | 1 | 1 | 1 | 3 | 3 | 2 | 3 | 2 | 3 | - | - | 1 | v | v | v | v | v | v |
| *6a | | | | | | | | | | | | | | | | | | |
| 6b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 2 | 2 | 1 | 5 | 2 | 2 | 2 | 2 | - | - | 1 | v | v | v | s | v | v |
| 2 | 6 | 6 | 6 | 6 | 3 | 6 | 3 | 6 | 6 | - | - | 1 | s | s | s | v | v | v |
| 3 | 2 | 1 | 3 | 3 | 4 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 4 | 4 | 4 | 1 | 2 | 1 | 5 | 4 | 4 | 4 | - | - | s | v | v | v | v | v | v |
| 5 | 3 | 3 | 4 | 5 | 6 | 3 | 6 | 3 | 5 | - | - | s | v | v | v | v | v | v |
| 6 | 5 | 5 | 5 | 4 | 2 | 4 | 5 | 5 | 3 | - | - | s | s | v | v | v | v | v |

## APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 6c | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | v | v | v | - | v | v | v |
| 2 | 2 | 2 | 4 | 3 | 2 | 2 | 3 | 2 | 3 | - | - | s | 3 | 2 | 2 | 3 | 2 | 3 |
| 3 | 3 | 4 | 3 | 4 | 3 | 3 | 4 | 3 | 4 | - | - | s | v | v | - | v | v | v |
| 4 | 4 | 3 | 2 | 2 | 4 | 4 | 2 | 4 | 2 | - | - | v | v | v | - | v | v | v |
| 6d | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | - | - | v | v | v | v | v | v | v |
| 2 | 4 | 5 | 3 | 2 | 4 | 4 | 4 | 3 | 2 | - | - | s | v | v | v | v | v | v |
| 3 | 3 | 2 | 2 | 3 | 3 | 6 | 6 | 5 | 1 | - | - | v | v | v | v | v | v | v |
| 4 | 2 | 4 | 5 | 4 | 2 | 2 | 3 | 2 | 4 | - | - | v | v | v | v | v | v | v |
| 5 | 5 | 3 | 6 | 5 | 5 | 5 | 5 | 4 | 5 | - | - | 1 | v | v | v | v | v | v |
| 6 | 6 | 6 | 4 | 6 | 6 | 3 | 2 | 6 | 6 | - | - | s | v | v | v | v | v | v |
| 7a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | 1 | v | v | v | v | v | v |
| 2 | 3 | 2 | 2 | 3 | 2 | 2 | 5 | 2 | 5 | - | - | 1 | v | v | v | v | v | v |
| 3 | 2 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 2 | - | - | 1 | s | v | v | v | v | 1 |
| 4 | 4 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 4 | - | - | 1 | v | v | v | v | v | v |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 3 | - | - | 1 | s | v | v | 1 | v | s |
| 7b | | | | | | | | | | | | | | | | | | |
| 1 | - | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 2 | - | - | s | v | v | v | v | v | v |
| 2 | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | s | v | v |
| 3 | - | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 4 | - | - | s | v | v | v | v | v | v |
| 4 | - | 4-5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | - | - | s | s | v | v | v | v | v |
| 5 | - | 4-5 | 4 | 4 | 4 | 4 | 5 | 4 | 3 | - | - | s | v | v | v | v | v | v |
| 7c | | | | | | | | | | | | | | | | | | |
| 1 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | s | v | v |
| 2 | - | - | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | s | v | v | v | v | v | v |
| 3 | - | - | 3 | 3 | 3 | 3 | 3 | 3 | 6 | - | - | s | v | v | v | v | v | v |
| 4 | - | - | 4 | 4 | 5 | 5 | 4 | 4 | 3 | - | - | s | v | v | v | v | v | v |
| 5 | - | - | 8 | 5 | 6 | 6 | 5 | 8 | 4 | - | - | 1 | v | v | v | v | v | v |
| 6 | - | - | 7 | 7 | 7 | 7 | 6 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| 7 | - | - | 6 | 8 | 8 | 8 | 8 | 6 | 7 | - | - | 1 | v | v | v | v | v | v |
| 8 | - | - | 5 | 6 | 4 | 4 | 7 | 7 | 8 | - | - | 1 | v | v | v | v | v | v |
| 8a | | | | | | | | | | | | | | | | | | |
| 1 | - | - | - | 2 | 2 | 2 | 1 | 1 | 3 | - | - | - | v | v | v | v | v | v |
| 2 | - | - | - | 3 | 1 | 1 | 2 | 2 | 1 | - | - | - | v | v | v | v | v | v |
| 3 | - | - | - | 1 | 3 | 3 | 3 | 3 | 2 | - | - | - | v | v | v | v | v | v |
| 4 | - | - | - | 4 | 4 | 4 | 4 | 4 | 4 | - | - | - | v | v | v | v | v | v |

## APPENDIX B (continued)

| Sub- | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Scale | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| & Item | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 8b | | | | | | | | | | | | | | | | | | |
| 1 | - | - | 4 | 1 | 2 | 1 | 1 | 1 | 3 | - | - | 1 | v | v | v | v | v | v |
| 2 | - | - | 1 | 2 | 1 | 2 | 2 | 2 | 1 | - | - | s | v | v | v | v | v | v |
| 3 | - | - | 3 | 4 | 3 | 3 | 3 | 3 | 4 | - | - | 1 | v | v | v | v | v | v |
| 4 | - | - | 2 | 3 | 4 | 4 | 4 | 4 | 2 | - | - | s | v | s | v | v | v | v |
| 8c | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 3 | 3 | 2 | 2 | 2 | 1 | 3 | - | - | - | s | v | v | v | v | v | - |
| 2 | 2 | 3 | 2 | 3 | 4 | 3 | 5 | 1 | - | - | - | s | v | v | v | v | v | - |
| 3 | 3 | 4 | 1 | 1 | 1 | 1 | 3 | 2 | - | - | - | v | v | v | v | v | v | - |
| 4 | 4 | 1 | 5 | 4 | 5 | 4 | 2 | 4 | - | - | - | v | v | v | v | v | v | - |
| 5 | 5 | 2 | 4 | 5 | 3 | 5 | 4 | 5 | - | - | - | s | v | v | v | v | v | - |
| 9a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | - | 1 | 1 | 1 | 3 | 1 | 1 | 1 | - | - | s | v | s | v | s | v | v |
| 2 | 3 | - | 2 | 2 | 4 | 2 | 3 | 4 | 2 | - | - | s | v | v | v | v | s | v |
| 3 | 2 | - | 4 | 3 | 2 | 1 | 4 | 2 | 3 | - | - | s | v | s | v | v | v | v |
| 4 | 4 | - | 3 | 4 | 3 | 4 | 2 | 3 | 4 | - | - | s | v | v | v | v | v | v |
| 9b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 2 | 2 | 4 | 3 | 2 | 2 | 3 | 3 | 3 | - | - | v | v | v | v | v | v | v |
| 3 | 5 | 4 | 5 | 2 | 3 | 3 | 4 | 4 | 2 | - | - | v | v | v | v | v | v | v |
| 4 | 3 | 5 | 2 | 4 | 4-5 | 4 | 5 | 1 | 4 | - | - | s | v | v | v | v | v | v |
| 5 | 4 | 3 | 3 | 5 | 4-5 | 5 | 2 | 5 | 5 | - | - | s | v | v | v | v | v | v |
| 9c | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 4 | 2 | 4 | 3 | 2 | 2 | 2 | 2 | 4 | - | - | s | v | v | v | v | v | v |
| 3 | 2 | 3 | 2 | 2 | 3 | 4 | 3 | 4 | 2 | - | - | s | v | v | v | v | s | v |
| 4 | 3 | 4 | 3 | 4 | 4 | 3 | 4 | 3 | 3 | - | - | s | v | v | v | v | v | v |
| 9d | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | 4 | - | - | v | v | v | v | v | v | v |
| 4 | 3 | 2 | 3 | 4 | 4 | 3 | 3 | 4 | 3 | - | - | s | v | v | v | v | v | v |
| *10a | | | | | | | | | | | | | | | | | | |
| 10b | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 2 | 1 | 2 | 1 | 1 | 3 | 2 | 2 | - | - | s | v | v | v | v | v | v |
| 2 | 1 | 1 | 2 | 1 | 2 | 3 | 1 | 1 | 1 | - | - | s | s | v | v | v | v | v |
| 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | - | - | s | v | s | v | v | v | v |

*

## APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| **10c** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | - | 2 | 3 | 1 | 3 | 1 | 1 | - | - | - | v | v | - | v | v | v |
| 2 | 2 | 2 | - | 1 | 2 | 2 | 1 | 2 | 2 | - | - | - | v | v | v | v | v | v |
| 3 | 4 | 4 | - | 3 | 1 | 3 | 2 | 3 | 3 | - | - | - | v | v | - | v | v | v |
| 4 | 5 | 5 | = | 5 | 5 | 5 | 4 | 4 | 4 | - | - | - | v | v | - | v | v | v |
| 5 | 3 | 3 | - | 4 | 4 | 4 | 5 | 5 | 5 | - | - | - | v | v | - | v | v | v |
| **11a** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | v | v | v | v | 1 | v | v |
| 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 3 | 4 | - | - | v | v | v | v | v | v | v |
| 4 | 3 | 2 | 4 | 4 | 4 | 3 | 3 | 4 | 3 | - | - | v | v | v | v | v | v | v |
| **11b** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | - | 6 | 1 | 1 | 1 | 1 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 2 | 3 | - | 1 | 2 | 2 | 3 | 3 | 3 | 3 | - | - | s | v | v | v | s | v | v |
| 3 | 5 | - | 2 | 3 | 3 | 2 | 4 | 4 | 5 | - | - | v | v | v | v | v | v | v |
| 4 | 4 | - | 5 | 5 | 7 | 4 | 2 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 5 | 2 | - | 7 | 4 | 4 | 5 | 7 | 6 | 7 | - | - | v | v | v | v | v | v | v |
| 6 | 6 | - | 3 | 6 | 5 | 7 | 5 | 5 | 4 | - | - | s | v | v | v | v | v | v |
| 7 | 7 | - | 4 | 7 | 6 | 6 | 6 | 7 | 6 | - | - | s | v | v | v | v | v | v |
| **11c** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 3 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 3 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 2 | 4 | 3 | 3 | 3 | 4 | 2 | 3 | - | - | v | v | v | v | v | v | v |
| 4 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 4 | 4 | - | - | s | v | v | v | v | v | v |
| **11d** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 4 | 1 | 1 | 1 | 2 | 1 | 3 | - | - | v | v | v | v | v | v | v |
| 2 | 5 | 4 | 6 | 4 | 3 | 5 | 3 | 4 | 5 | - | - | v | s | v | v | v | v | v |
| 3 | 2 | 2 | 3 | 2 | 2 | 3 | 4 | 3 | 1 | - | - | s | v | v | v | v | v | v |
| 4 | 6 | 6 | 2 | 6 | 6 | 6 | 1 | 6 | 4 | - | - | s | s | v | v | s | s | v |
| 5 | 3 | 3 | 1 | 5 | 4 | 2 | 5 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 6 | 4 | 5 | 5 | 3 | 5 | 4 | 6 | 5 | 6 | - | - | v | v | v | v | v | v | v |
| **12a** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | 1 | s | 1 | v | - | - | s |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | 2 | - | - | s | s | v | v | - | - | s |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | 3 | - | - | s | v | v | v | - | - | s |

## APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 12b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | v | v | v | v | | v | v |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 7 | 3 | - | - | s | v | l | v | s | v | v |
| 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 3 | 4 | - | - | s | s | v | v | v | s | v |
| 5 | 7 | 6 | 5 | 6 | 5 | 5 | 6 | 5 | 6.5 | - | - | v | s | v | v | v | v | v |
| 6 | 5 | 5 | 6 | 5 | 6 | 6 | 5 | 4 | 5 | - | - | s | s | v | v | v | s | v |
| 7 | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6.5 | - | - | v | s | v | v | v | v | v |
| 12c | | | | | | | | | | | | | | | | | | |
| 1 | 3 | 3 | 1 | 1 | 5 | 1 | 1 | 1 | 4 | - | - | l | v | v | v | v | v | v |
| 2 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 3 | - | - | l | s | v | v | v | v | v |
| 3 | 4 | 4 | 3 | 3 | 4 | 5 | 4 | 3 | 5 | - | - | l | s | v | v | v | v | v |
| 4 | 2 | 2 | 5 | 4 | 1 | 3 | 3 | 4 | 1 | - | - | l | l | v | v | s | v | s |
| 5 | 5 | 5 | 4 | 5 | 2 | 4 | 5 | 5 | 2 | - | - | l | l | v | v | v | v | s |
| 12d | | | | | | | | | | | | | | | | | | |
| 1 | 3 | 3 | 1 | 4 | 1 | 1 | 1 | 4 | 1 | - | - | s | v | s | v | v | v | v |
| 2 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 4 | - | - | v | v | v | v | v | v | v |
| 3 | 2 | 2 | 3 | 3 | 3-4 | 3 | 3-4 | 2 | 3 | - | - | v | v | v | v | v | v | v |
| 4 | 4 | 4 | 4 | 2 | 3-4 | 4 | 3-4 | 3 | 2 | - | - | s | v | v | v | v | v | v |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | - | - | s | v | v | v | v | v | v |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | - | - | s | v | v | v | s | v | v |
| 13a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | - | - | v | v | v | v | v | v | v |
| 2 | 5 | - | 2 | 2 | 2 | 1 | 2 | 3 | 1 | - | - | s | v | s | v | s | v | v |
| 3 | 2 | 2 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | - | - | s | v | v | - | v | v | v |
| 4 | 3 | - | 4 | 5 | 4 | 6 | 4 | 6 | 4 | - | - | v | v | v | v | v | v | v |
| 5 | 4 | - | 5 | 4 | 5 | 5 | 5 | 5 | 5 | - | - | s | v | v | v | v | v | v |
| 6 | 6 | - | 6 | 6 | 6 | 3 | 6 | 2 | 6 | - | - | v | v | v | v | v | v | v |
| 7 | 7 | - | 7 | 7 | 7 | 7 | 7 | 7 | 7 | - | - | v | v | v | v | v | v | v |
| 13b | | | | | | | | | | | | | | | | | | |
| 1 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 1 | - | s | v | v | v | v | v | v | - | - | s | v | v | v | v | v | v |
| 3 | 2 | 1 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | - | - | s | v | v | v | v | v | v |
| 4 | 4 | 3 | 5 | 5 | 5 | 4 | 5 | 2 | 5 | - | - | v | v | v | v | v | v | v |
| 5 | 5 | - | 4 | 4 | 4 | 5 | 2 | 5 | 2 | - | - | v | v | v | v | v | v | v |

## APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 13c | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 2 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | - | - | v | v | v | v | v | v | v |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | - | - | v | v | v | v | v | v | v |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| 14a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | - | - | s | v | v | - | s | v | v |
| 2 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | - | - | s | v | v | - | v | v | v |
| 3 | 3 | 3 | 6 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | s | v | v | - | v | v | v |
| 4 | 4 | 4 | 3 | 4 | 4 | 5 | 4 | 4 | 4 | - | - | s | v | v | - | v | v | v |
| 5 | 6 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 5 | - | - | s | v | v | - | v | v | v |
| 6 | 5 | 6 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | - | - | s | v | v | - | v | v | v |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | - | - | v | v | v | - | v | v | v |
| 14b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 3 | 4 | 4 | 5 | 3 | 3 | 4 | 3 | 3 | - | - | v | v | v | v | v | v | v |
| 4 | 4 | 3 | 3 | 4 | 4 | 4 | 2 | 4 | 4 | - | - | s | s | v | v | s | v | v |
| 5 | 5 | 5 | 5 | 2 | 5 | 5 | 5 | 5 | 5 | - | - | 1 | v | v | v | v | v | v |
| 14c | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1-2 | 1 | 2 | - | - | s | v | v | v | v | v | v |
| 2 | 2 | 3 | 1 | 2 | 2 | 2 | 1-2 | 2 | 1 | - | - | s | v | v | v | v | v | v |
| 3 | 3 | 2 | 3 | 3 | 5 | 4 | 3 | 3 | 4 | - | - | s | v | v | v | v | v | v |
| 4 | 4 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 3 | - | - | s | v | v | v | v | v | v |
| 5 | 5 | 5 | 5 | 5 | 6 | 6 | 5 | 5 | 5 | - | - | v | v | v | v | v | v | v |
| 6 | 6 | 6 | 6 | 6 | 4 | 5 | 6 | 6 | 6 | - | - | v | v | v | v | v | v | v |
| 14d | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | - | - | s | s | v | v | s | v | v |
| 2 | 2 | 2 | 2 | 2 | 3-4 | 2 | 4 | 2 | 2 | - | - | s | v | v | v | s | v | v |
| 3 | 3 | 3 | 3 | 3 | 3-4 | 4 | 2 | 4 | 3 | - | - | s | v | v | v | v | v | v |
| 4 | 4 | 4 | 4 | 4 | 2 | 3 | 3 | 3 | 4 | - | - | s | v | v | v | v | v | v |
| 15a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 3 | 1 | 1 | 1 | 3 | 1 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 3 | 3 | 2 | 4 | 4 | 4 | 2 | 2 | 4 | - | - | s | s | v | v | v | v | v |
| 3 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 3 | 3 | - | - | s | v | v | v | s | v | v |
| 4 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 2 | - | - | s | s | v | v | v | v | v |

## APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| **15b** | | | | | | | | | | | | | | | | | | |
| 1 | 4 | - | 3 | 2 | 4 | 2 | 4 | 1 | 3 | - | - | s | v | v | v | v | v | v |
| 2 | 1 | - | 4 | 3 | 1 | 4 | 3 | 3 | 2 | - | - | s | v | v | v | v | v | v |
| 3 | 3 | - | 1 | 1 | 2 | 3 | 1 | 2 | 4 | - | - | v | v | v | v | v | v | v |
| 4 | 2 | - | 2 | 4 | 3 | 1 | 2 | 4 | 1 | - | - | l | v | s | v | s | v | v |
| **15c** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 3 | 5 | 3 | 3 | 2 | 2 | 5 | 5 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 4 | 6 | 2 | 6 | 6 | 6 | 6 | 6 | 6 | - | - | v | v | s | v | v | v | v |
| 4 | 5 | 3 | 5 | 4 | 3 | 4 | 4 | 1 | 4 | - | - | s | v | v | v | v | v | v |
| 5 | 2 | 4 | 4 | 2 | 4 | 3 | 2 | 4 | 5 | - | - | v | v | v | v | s | v | v |
| 6 | 6 | 2 | 6 | 5 | 5 | 5 | 3 | 2 | 3 | - | - | s | v | v | v | s | v | v |
| **15d** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | - | - | s | s | v | v | v | v | v |
| 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | - | - | s | s | v | v | v | v | v |
| 3 | 4 | 1 | 3 | 4 | 3 | 4 | 4 | 3 | 1 | - | - | s | v | v | v | v | v | v |
| 4 | 3 | 2 | 4 | 3 | 4 | 3 | 3 | 4 | 2 | - | - | s | v | v | v | v | v | v |
| ***16a** | | | | | | | | | | | | | | | | | | |
| **16b** | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 1 | - | - | s | v | v | v | v | v | v |
| 2 | 3 | 2 | - | 2 | 2 | 2 | 1 | 1 | 4 | - | - | - | v | s | v | s | v | s |
| 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | s | v | v | v | v | v | v |
| 4 | 4 | 4 | 2 | 4 | 4 | 4 | 2 | 4 | 2 | - | - | s | s | v | v | v | v | v |
| **16c** | | | | | | | | | | | | | | | | | | |
| 1 | - | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 3 | 2 | - | 1 | 1 | 3 | 1 | 1 | 2 | - | - | - | v | v | v | v | v | s |
| 3 | - | 3 | - | 6 | 3 | 5 | 3 | 5 | 4 | - | - | - | v | v | v | v | v | v |
| 4 | 2 | 5 | - | 4 | 4 | 6 | 5 | 3 | 3 | - | - | - | v | s | v | v | v | v |
| 5 | 1 | 6 | 5 | 3 | 5 | 2 | 4 | 4 | 6 | - | - | - | v | v | v | s | v | s |
| 6 | - | 4 | 3 | 5 | 6 | 4 | 6 | 6 | 5 | - | - | s | v | v | v | v | v | v |
| **16d** | | | | | | | | | | | | | | | | | | |
| 1 | - | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 5 | - | - | s | v | v | v | v | v | v |
| 2 | - | - | 1 | 2 | 5 | 3 | 2 | 2 | 4 | - | - | s | v | v | v | v | v | v |
| 3 | - | - | 4 | 3 | 2 | 4 | 5 | 3 | 3 | - | - | s | v | v | v | v | v | v |
| 4 | - | - | 5 | 5 | 4 | 5 | 3 | 4 | 2 | - | - | s | v | v | v | v | v | v |
| 5 | - | - | 2 | 4 | 3 | 2 | 4 | 5 | 1 | - | - | s | v | v | v | v | v | v |

*

APPENDIX B (continued)

| Sub-Scale & Item | (A) Order in Developmental Sequence | | | | | | | | | (B) Rating on Significance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ch. Dev. | | | O. & M. | | | Teachers | | | Ch. Dev. | | | O. & M. | | | Teachers | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 17a | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | - | - | v | 1 | v | v | v | v | v |
| 2 | 5 | - | 3 | 2 | 5 | 2 | 4-5 | 2 | 1 | - | - | v | 1 | v | v | v | v | v |
| 3 | 3 | 2 | 4 | 3 | 2 | 3 | 4-5 | 3 | 5 | - | - | v | 1 | v | v | v | v | v |
| 4 | 4 | 4 | 5 | 4 | 4 | 4 | 1 | 5 | 4 | - | - | v | s | v | v | s | v | v |
| 5 | 2 | 3 | 2 | 5 | 3 | 5 | 3 | 4 | 3 | - | - | v | 1 | v | v | v | v | v |
| 17b | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | - | - | v | v | v | v | v | v | v |
| 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | - | - | v | v | v | v | v | v | v |
| 3 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | - | - | v | v | s | v | v | s | v |
| 4 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | - | - | v | v | v | v | v | v | v |
| 17c | | | | | | | | | | | | | | | | | | |
| 1 | 4 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 4 | - | - | v | v | v | v | v | v | v |
| 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | - | - | v | v | v | v | s | v | v |
| 3 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 3 | 2 | - | - | v | v | v | v | s | v | v |
| 4 | 3 | 2 | 4 | 3 | 4 | 3 | 3 | 2 | 3 | - | - | v | v | v | v | v | v | v |
| 17d | | | | | | | | | | | | | | | | | | |
| 1 | 3 | 2 | 1 | 2 | 1 | 3 | 1 | - | 3 | - | - | v | v | v | v | v | - | v |
| 2 | 1 | 3 | 2 | 1 | 2 | 4 | 2 | - | 2 | - | - | s | v | v | v | v | - | v |
| 3 | 2 | 1 | 3 | 3 | 4 | 5 | 3 | - | 1 | - | - | s | v | v | v | v | - | v |
| 4 | 5 | 5 | 4 | 4 | 3 | 1 | 4 | - | 5 | - | - | v | v | v | v | v | - | v |
| 5 | 4 | 4 | 5 | 5 | 5 | 2 | 5 | - | 4 | - | - | v | v | v | v | v | - | v |